



State of Transportation

in ALAMEDA COUNTY

2004-2005
PERFORMANCE REPORT

State of Transportation
In Alameda County
2004-2005

PERFORMANCE REPORT

ALAMEDA COUNTY CONGESTION MANAGEMENT AGENCY

November 2005

Table of Contents

EXECUTIVE SUMMARY

Alameda County Transportation System	ES-1
Alameda County Characteristics	ES-2
Journey to Work Information from 2000 Census	ES-2
Description of Performance Measures	ES-3
Performance Measures	ES-3

1—INTRODUCTION

Alameda County Transportation System	1
Alameda County Characteristics	2
Journey to Work Information from the 2000 Census	2
Performance Measures	3

2—HIGHWAYS

Level of Service.....	4
Average Speed/Travel Time	4
Origin/Destination Pair	8
Delay/Duration of Congestion	8
Road Maintenance.....	14
Accident Rates	16

3—TRANSIT

Operators	17
Performance Measures	20
Routing	21
Frequency	23
Coordination of Transit Services	26
Ridership	28
Vehicle Maintenance	34

Observations about the Transit System	36
---	----

4—BICYCLE	37
------------------------	-----------

APPENDICES

A—Metropolitan Transportation System Streets and Highway System	A
B—Metropolitan Transportation System Transit Corridors	B
C—Level of Service Descriptions	C
D—Transit Routing by Operator	D
E—2004 Top 10 Congested Locations in Alameda County	E
F—Countywide Bicycle Facilities Constructed in 2004	F

TABLES

ES.1—Performance Measures	ES-3
ES.2—Summary of Applied Performance Measures for Alameda County Transportation System	ES-7
1—Performance Measures	3
2—Average Vehicle Speed in the p.m. Peak.....	6
3—Average Vehicle Speed in the a.m. Peak.....	6
4—Comparison of Speeds in the a.m. Peak	7
5—Comparative Travel Times for Origin/Destination Pairs in the p.m. Peak.....	9
6—Total Weekday Delay on Freeways	10
7—Vehicle Hours Delayed in Top 10 Congested Locations in Alameda County (2002-2004)	12
8—Duration of Top 10 Congested Locations in Alameda County (2002-2004)	13
9—Rating of Pavement Condition	14
10—Pavement Condition in Local Alameda County Jurisdictions.....	14
11—State Facility Lane Miles in Need of Rehabilitation in Alameda County	15
12—Accident Data for State Freeways in Alameda County	16
13—Transit Routing within Alameda County	21
14—Transit Service Frequency in Alameda County.....	24
15—Total Annual Passenger Boardings	30
16—Total Annual Systemwide Passenger Boardings (per revenue vehicle mile).....	31
17— Total Annual Systemwide Passenger Boardings (per revenue vehicle hour)	33

18— Average Weekday Passenger Boardings	34
19— Miles between Mechanical Road Calls for AC Transit and LAVTA	35
20— Mean Time between Service Delays for the BART and ACE Systems	35
D.1—Directional Route Miles by Operator in Alameda County	D-1
D.2—Total Vehicle Miles by Operator in Alameda County	D-2
D.3—Service Coverage by Operator in Alameda County	D-3
D.4—Total Annual Passengers Boardings	D-4
F—Countywide Bicycle Facilities Constructed in 2003	F

FIGURES

1—Level of Service on Freeways and Arterials	5
2—Transit Lines Serving Major Alameda County Transportation Terminals	27
A—MTS Roadway System	A
B—MTS Transit System	B

Executive Summary

The 2004-2005 Performance Report is the ninth report prepared by the Alameda County Congestion Management Agency (CMA). The purpose of the Report is to provide information on how the transportation system is functioning in Alameda County. The report will also help identify transportation improvements to be considered in developing the Capital Improvement Program for the Congestion Management Program (CMP) and in future update of the long-range Countywide Transportation Plan.

ALAMEDA COUNTY TRANSPORTATION SYSTEM

This Performance Report focuses on a portion of the transportation system in Alameda County defined as the Metropolitan Transportation System (MTS). This system includes the entire CMP-designated roadway system plus major arterials, transit services, rail, maritime ports, airports and transfer points that are critical to the region's movement of people and freight. Figures in Appendices A and B depict both the CMP-designated system and the MTS. Data in this report is labeled as either pertaining to the CMP network or to the MTS.

Highway

There are about 215 miles of state facilities and 306 miles of local arterial roadways on the MTS in Alameda County. The CMP network, a subset of the MTS, consists of:

- 134 miles of interstate freeways;
- 71 miles of conventional state highways; and
- 27 miles of local arterial roadways.

Transit

The following transit services are available in the County:

- BART;
- Bus service (both local and transbay) from AC Transit, Livermore-Amador Valley Transit (LAVTA), and Union City Transit, public-private shuttle services throughout the county and subscription bus service in East County;
- Ferry service, provided by the Alameda/Oakland Ferry and Alameda Harbor Bay Ferry; and

- Rail service, provided by the Capitol Corridor (Sacramento-San Jose) and Altamont Commuter Express (Stockton-San Jose).

Bicycle

The CMA is currently updating the Countywide Bicycle Plan that was developed and adopted in July 2001. The update is scheduled to be completed by May 2006. The current Countywide Bicycle Plan includes a proposed countywide bikeway network of approximately 492 miles of which 120 miles (24%) were on existing facilities in 2001. In the past four years, 85 miles were constructed including 36 miles constructed between July 2003 and June 2004 (fiscal year 2004).

ALAMEDA COUNTY CHARACTERISTICS

The California Department of Finance estimated that Alameda County had a population of 1,507,500 by May 2005. Of the 58 counties in California, Alameda County was the 7th largest county in the State of California and the second largest in the Bay Area. ABAG estimated that there were 747,500 jobs in 2005.

JOURNEY TO WORK INFORMATION FROM 2000 CENSUS

The 2000 Census included questions on how workers traveled to their workplace. According to this data, Alameda County workers were slightly more inclined to use an alternative mode to arrive at their workplace as compared to workers in the rest of the Bay Area.

	DRIVE ALONE	CARPOOL	TRANSIT	WALK	OTHER	WORK AT HOME
Alameda County	66.4 %	13.8 %	10.6 %	3.2 %	2.5 %	3.5 %
Bay Area	68.0 %	12.9 %	9.7 %	3.2 %	2.2 %	4.0 %

The census also provided information on the average time workers travel to their jobs. The average time reported in 2000 was 30.8 minutes as compared to 25.8 minutes in 1990. The average commute length for Alameda County increased from 10.9 miles in 1990 to 12.49 miles in 2000, an increase of 15%. Bay Area region had an increase of 12% from 11 miles to 12.31 miles. Commute length is calculated by area of residence, and these values exclude interregional commuters. The increased travel time could be the result of longer commute length and/or level of congestion.

DESCRIPTION OF PERFORMANCE MEASURES

Table ES.1 presents the list of performance measures approved in the CMP. These performance measures address three modes of transportation: highways, transit and bicycle. Measuring the conditions of each mode relied primarily on available data and established data collection processes. Summary tables are provided within the body of the report and more detailed data are provided in the appendices.

Table ES.1—Performance Measures

HIGHWAY	TRANSIT	BICYCLE
Level of Service	Routing	Implementation of Countywide Bicycle Plan
Average Speed/ Travel Time	Frequency	
Delay/Duration of Congestion	Coordination of Services	
Road Maintenance	Ridership	
Accident Rates	Vehicle Maintenance	

PERFORMANCE MEASURES

Table ES.2 provides an overview of the applied performance measures for the Alameda County transportation system in 2004-05 (these vary depending on the data). For more detailed information and explanation please refer to the complete report. Some notable observations found in the data include:

Highway Congestion Data

The trend in highway congestion changed in 2004. For the first time since 2001, overall congestion increased in Alameda County. MTC stated that the increase in congestion appears to largely reflect a general improvement in the Bay Area economy in 2004. It is also likely that the construction activity on the Bay Bridge contributed to the increased congestion. The following are the important findings:

- 2004 congestion data shows an increased total congestion on county freeways by 4,240 (50,540 in 2004 compared with 46,300 in 2003) vehicle hours of delay (VHD), a 9 % increase, compared to the drop in congestion between 2002 and 2003 by 24.5%.
- In the Bay Area, Congestion in Alameda County account for 40% of total congestion, which is more than double that of the congestion in the second most congested county, Santa Clara.

EXECUTIVE SUMMARY

- Interstate 80 in the morning peak continues to retain its rank as the most congested corridor in Alameda County and the Bay Area Region and measured congestion similar to the level in 2000, the dot com related economy boom period. Congestion on this segment was 10,080 VHD, which is 53% higher than the congestion level for the most congested segment in 2003.
- Of the top-10 congested corridors in Alameda, regarding congestion within Alameda County, congestion on I-80 accounts for 41% of VHD, I-580 accounts for 36% of VHD and I-880 accounts for 12%.
- The vehicle hours of delay on the westbound I-580 in the morning increased 19% between 2003 and 2004 making it second in the top 10 congested corridors, while eastbound I-580 in the afternoon stayed the same making it third.
- Eastbound SR 92 moved up from 8th rank in 2003 to 4th rank in 2004 with increased congestion (1,650 VHD). The time period that facility was congested increased by 85 minutes.
- Eastbound SR 24 between I-580 and Caldecott Tunnel dropped from the top 10 list.
- Southbound and northbound I-880 registered almost the same level of congestion and maintained the same relative places in the top 10 list.

Level of Service (LOS) of Roadways

LOS Monitoring occurs in the even numbered years. The following information reflects data from 2004. The CMP roadways are scheduled to be monitored in Spring 2006.

PM Peak LOS:

During the PM peak, there were notable improvements on the freeway levels of service in some portions of the network while there was also significant degradation in other areas. The percentage of freeway centerline miles at LOS A has improved from 17.2 in 2002 to 34.0 in 2004 while freeways with LOS E and worse have increased from 20.0 percent in 2002 to 28.7 percent in 2004.

- 24 EB from I-580 to Fish Ranch improved from an average speed of 21.4 mph (LOS F) to 39.9 mph (LOS E)
- I-580 EB from I-80/I-580 to I-238 deteriorated from LOS B to LOS D. Congestion was primarily between Harrison and SR 13 in Oakland
- I-680 NB from Scott Creek to SR 84, a 11-mile corridor, experienced an average speed decrease from 46 mph (LOS D) to 31 mph (LOS E)

- SR 13 northbound between Joaquin Miller and Hiller deteriorated from an average speed of 52 mph (LOS C) to 29 mph (LOS F).

LOS F10- the worst LOS:

The 2004 LOS Monitoring Study included an approach to identify the severity of congestion on freeways during PM peak for LOS F segments. Three ranges of F were developed, which are F30, F20 and F10. The number following the F indicates that the maximum speed on that segment, for example F10 means that the average speed was below 10 mph.

- The only segment identified as LOS F10 was eastbound I-580 between I-680 and Santa Rita road in the PM peak.

AM Peak LOS:

- During the AM peak, southbound I-680, particularly the segment between SR 84 to Scott Creek showed significant improvement with the average speed recorded at 64 mph (LOS A) from 27 mph (LOS F).

O&D Pairs Travel Times

- Auto travel times continue to be significantly lower i.e. better, than that of transit travel times ranging from 2 to 5 times. Transit travel times, particularly by bus, have degraded significantly in comparison to previous years, which could be due to AC transit service reductions.

Pavement Condition

- MTC reports that the average PCI for Alameda County roadways has remained same at 63 for the last two years.

Accidents on County Freeways

- Accidents on Alameda County freeways increased slightly in 2004 (8570) by about 3% compared to 2003 (8303). I-680 continued to show decline in accident rate and lowest rate compared with other freeways. SR 24 and SR 92 showed increase in accident rates.

Transit

For FY 2004-05, ridership in Alameda County remained relatively stable, with less than one percent increase in ridership compared to the previous fiscal year.

Bike Facility Construction

In 2004, five cities and unincorporated Alameda County constructed bicycle routes on the network approved in the 2001 Countywide Bicycle Plan. Approximately 36 miles of bicycle facilities on the countywide plan were constructed. The percentage of completed countywide miles is 42 percent.

Table ES.2—Summary of Applied Performance Measures

PERFORMANCE MEASURE	OBJECTIVE OF CMP	2004-05 RESULTS	OBSERVATION
HIGHWAYS			
Level of Service (based on 2004 monitoring)	<ul style="list-style-type: none"> • Mobility • Air Quality 	<p>Freeways: LOS A doubled; B ,C, D and F decreased; E increased 3 times.</p> <p>Arterials: LOS A remained same; B decreased and C increased; Slight increase in D and F; E dropped by one third.</p>	The changes from 2002 are opposite for Freeways in comparison to Arterials, LOS A increased on freeways and dropped on Arterials. While C dropped and LOS E increased on Freeways, C increased and LOS E decreased on Arterials.
Average Speed	<ul style="list-style-type: none"> • Mobility • Air Quality • Land Use 	<p>Freeways: 49.8 mph for the afternoon peak</p> <p>Freeways: 46.5 for the morning peak</p> <p>Arterials: 24.3 mph for the afternoon peak</p>	<p>The average speed during the evening peak on arterials slightly increased.</p> <p>The average freeway speed for the morning peak increased 4.5 miles per hour. These findings are consistent with the results of the LOS cited above.</p>
Travel Time	<ul style="list-style-type: none"> • Mobility • Air Quality • Land Use 	<p>Travel times for 3 origin-destination pairs continued to show auto is significantly faster than transit. Data for other pairs are not comparable because of change in destination locations in 2004.</p> <p>Bicycle trips in the northern part of the county continue to compete well with both auto and transit trips.</p>	<p>In general, transit trips took more than 2 to 5 times longer than trips by auto. Significant increases in transit times are similar to previous years.</p> <p>Increases could be due to the reduction in transit services.</p>

EXECUTIVE SUMMARY

PERFORMANCE MEASURE	OBJECTIVE OF CMP	2004-05 RESULTS	OBSERVATION
Duration of Congestion (based on 2004 Highway Congestion Data from MTC and Caltrans for Alameda County roadways)	<ul style="list-style-type: none"> Economic Air Quality 	<p>Congestion measured in 2004 showed a change in trend with 50,540 VHD from 46,300 VHD in 2003, an increase of 9%.</p> <p>Interstate 80 registered an increase of 56% compared with 2003, almost same level as in 2000.</p> <p>Congestion on WB I-580 in the morning increased by 19% compared to 2003.</p>	Per MTC, this increase in congestion appears to largely reflect a general improvement in the Bay Area economy in 2004. It is also likely due to the construction activity on the Bay Bridge.
Maintenance (Local)	<ul style="list-style-type: none"> Economic 	<p>Pavement Condition:</p> <p>Excellent – 21 %</p> <p>Very Good – 34%</p> <p>Good -18 %</p> <p>Fair –13 %</p> <p>Poor – 7 %</p> <p>Very Poor – 2 %</p>	Percentage of roads reported to be in good or satisfactory condition increase by 8% from 2003-04.
Accident Rate	<ul style="list-style-type: none"> Mobility Air Quality Economic 	Total accidents on state freeways increased by 3% from last year. Accident rates generally showed increase while few freeways showed reduction.	I-680 continued to show decline in accident rate and lowest rate compared with other freeways. SR 24 and SR 92 showed increase in accident rates.

TRANSIT

Ridership	<ul style="list-style-type: none"> Economic Air Quality Land Use 	<p>Transit ridership in terms of total annual passenger boardings in Alameda County has remained stable at 100 million in 2004/05.</p>	Ridership remained stable in the past two years, likely corresponding with the economic recovery.
-----------	---	--	---

PERFORMANCE MEASURE	OBJECTIVE OF CMP	2004-05 RESULTS	OBSERVATION
Coordination of Services	<ul style="list-style-type: none"> • Mobility • Air Quality 	Transfer facilities are located at BART, AMTRAK, ACE, Dublin and Livermore Transit Centers, Greyhound and ferry terminals	The greatest number of transfer opportunities is found at the BART stations.
Vehicle Maintenance	<ul style="list-style-type: none"> • Air Quality 	<p>Bus Service: Miles between mechanical road calls doubled for LAVTA since 2003 and slightly reduced for AC Transit.</p> <p>Rail: Mean time between service delays increased by 6 percent for BART since 2003.</p>	AC Transit continues to invest in mechanics training and both AC Transit and LAVTA purchased new buses in 2003; BART rehabilitated several rail cars in 2002.
Routing	<ul style="list-style-type: none"> • Mobility • Air Quality • Land Use 	Surface miles (directional route miles) covered by transit increased 32 percent between 1995 and 2005, with a steady increase over that time. Surface miles increased by 10 percent during the last fiscal year.	Additional surface miles in the pas year were attributed to LAVTA's week-end service and AC Transit, who introduced TransBay Line U, connecting Fremont and Newark with Stanford University.
Frequency	<ul style="list-style-type: none"> • Mobility • Air Quality • Land Use 	During the peak commute hours, 89 percent of Alameda County bus routes (93 routes) arrive every 40 minutes or less and 24 percent arrive every 15 minutes or less.	Although the number of bus routes during this period reduced since last year, the frequency has remained relatively consistent for the peak period.

EXECUTIVE SUMMARY

PERFORMANCE MEASURE	OBJECTIVE OF CMP	2004-05 RESULTS	OBSERVATION
BICYCLE			
Completion of Countywide Bike Plan	<ul style="list-style-type: none"> • Mobility • Air Quality 	Countywide Bicycle Plan proposes approximately 492 miles of countywide facilities. 205 miles are existing, of which 85 miles are completed in the last 4 years.	The Countywide Bicycle network is about 42 percent complete.

CHAPTER ONE **Introduction**

The 2004-2005 Performance Report is the ninth report prepared by the Alameda County Congestion Management Agency (CMA). The purpose of the Report is to provide information on how the transportation system is functioning in Alameda County. The report will also help identify transportation improvements to be considered in developing the Capital Improvement Program for the Congestion Management Program (CMP) and in future update of the long-range Countywide Transportation Plan.

Following this introduction, the report is presented in three sections: highways; transit; and bicycle. Each section specifically addresses performance measures for the three modes of transportation, as approved in the CMP (shown in Table 1).

ALAMEDA COUNTY TRANSPORTATION SYSTEM

This Performance Report focuses on a portion of the transportation system in Alameda County defined as the Metropolitan Transportation System (MTS). This system includes the entire CMP-designated roadway system plus major arterials, transit services, rail, maritime ports, airports and transfer points that are critical to the region's movement of people and freight. Figures in Appendices A and B depict both the CMP-designated system and the MTS. Data in this report is labeled as either pertaining to the CMP network or to the MTS.

Highway

There are about 215 miles of state facilities and 306 miles of local arterial roadways on the MTS in Alameda County. The CMP network, a subset of the MTS, consists of:

- 134 miles of interstate freeways;
- 71 miles of conventional state highways; and
- 27 miles of local arterial roadways.

Transit

The following transit services are available in the County:

- BART;
- Bus service (both local and transbay) from AC Transit, Livermore-Amador Valley Transit (LAVTA), and Union City Transit, public-private shuttle services throughout the county and subscription bus service in East County;

- Ferry service, provided by the Alameda/Oakland Ferry and Alameda Harbor Bay Ferry; and
- Rail service, provided by the Capitol Corridor (Sacramento-San Jose) and Altamont Commuter Express (Stockton-San Jose).

Bicycle

The CMA is currently updating the Countywide Bicycle Plan that was developed and adopted in July 2001. The update is scheduled to be completed by May 2006. The current Countywide Bicycle Plan includes a proposed countywide bikeway network of approximately 492 miles of which 120 miles (24%) were on existing facilities in 2001. In the past four years, 85 miles were constructed including 36 miles constructed between July 2003 and June 2004 (fiscal year 2004).

ALAMEDA COUNTY CHARACTERISTICS

The California Department of Finance estimated that Alameda County had a population of 1,507,500 by May 2005. Of the 58 counties in California, Alameda County was the 7th largest county in the State of California and the second largest in the Bay Area. ABAG estimated that there were 747,500 jobs in 2005.

JOURNEY TO WORK INFORMATION FROM 2000 CENSUS

The 2000 Census included questions on how workers traveled to their workplace. According to this data, Alameda County workers were slightly more inclined to use an alternative mode to arrive at their workplace as compared to workers in the rest of the Bay Area.

	DRIVE ALONE	CARPOOL	TRANSIT	WALK	OTHER	WORK AT HOME
Alameda County	66.4 %	13.8 %	10.6 %	3.2 %	2.5 %	3.5 %
Bay Area	68.0 %	12.9 %	9.7 %	3.2 %	2.2 %	4.0 %

The census also provided information on the average time workers travel to their jobs. The average time reported in 2000 was 30.8 minutes as compared to 25.8 minutes in 1990. The average commute length for Alameda County increased from 10.9 miles in 1990 to 12.49 miles in 2000, an increase of 15%. Bay Area region had an increase of 12% from 11 miles in 1990 to 12.31 miles in 2000. Commute length is calculated by area of residence, and these values exclude interregional commuters. The increased travel time could be the result of longer commute length.

PERFORMANCE MEASURES

Table 1 presents the list of performance measures approved in the CMP. The measures address three modes of transportation: highways, transit and bicycle. Measuring the conditions of each mode relied primarily on available data and established data collection processes. Summary tables are provided throughout the body of this report; more detailed data can be found in the appendices.

Table 1—Performance Measures

HIGHWAY	TRANSIT	BICYCLE
Level of Service	Routing	Implementation of Countywide Bicycle Plan
Average Speed/ Travel Time	Frequency	
Delay/Duration of Congestion	Coordination of Services	
Road Maintenance	Ridership	
Accident Rates	Vehicle Maintenance	

LEVEL OF SERVICE¹

Biennially, the CMA monitors the level of service (LOS) on all freeways and arterial roadways designated as the CMP network. Based on travel speeds, LOS is categorized into six levels: A through F. LOS A represents no congestion and LOS F represents the most congestion (see Appendix C for more details on LOS). The most recent monitoring was done in 2004. As shown in Figure 1, the overall 2004 level of service on both freeways and arterials is similar to previous years with some notable exceptions:

- I-80 EB in the p.m. from Toll Plaza to Central Ave improved from LOS F in 2002 to LOS D in 2004.
- I-580 EB in the p.m. from I-80/I-580 to I-238 deteriorated from LOS B to LOS D. Congestion was primarily between Harrison and SR 13 in Oakland.
- I-680 NB in the afternoon from Scott Creek to SR 84, a 11-mile corridor, experienced an average speed decrease from 46 mph (LOS D) to 31 mph (LOS E).
- SR 13 northbound between Mountain and Hiller in the p.m. deteriorated from LOS C to LOS E.
- SR 24 EB in the afternoon from I-580 to Fish Ranch Road improved from an average speed of 21.4 mph (LOS F) to 39.9 mph (LOS E).

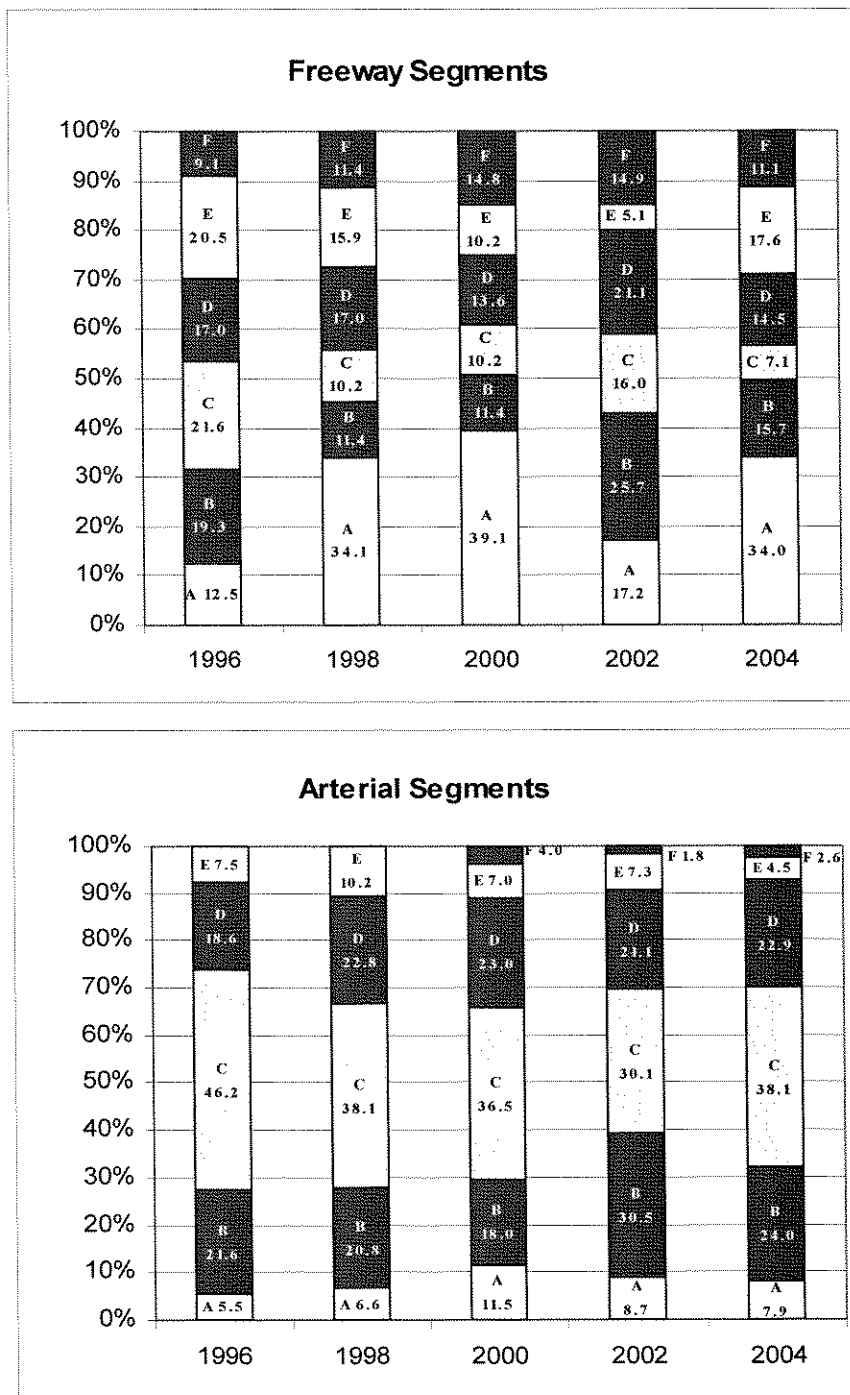
The 2004 LOS Monitoring results show that traffic congestion on the Alameda County freeways has slightly worsened in few places and improved in other areas since the 2002 studies. Arterials have somewhat improved during this time. In the case of freeways, the percentage of roadways with LOS F has slightly decreased from 2002 while the percentage of freeways with LOS E has increased three times from 5.1% in 2002 to 17.6% in 2004.

The CMP roadways are scheduled for the next monitoring in spring 2006.

AVERAGE SPEED/TRAVEL TIME

Average highway speed is the average vehicular travel speed over specified segments, measured in each lane during the peak period. The CMA collects data biennially for the afternoon and morning peak periods. Table 2 indicates that travel time, as measured by speed, remained relatively stable over the last eight years. Average travel speed on the freeways remained the same in 2004 as in 1996, and on the arterials it was 1.16 miles per hour lower in 2004 than in 1996. The average speed demonstrates that, as a whole, the transportation system has been operating almost similarly over the last 10 years. Although the average is similar, some individual segments improved while others may have gotten worse.

¹ For detailed information see *Monitoring the Level of Service for the Alameda County CMP Designated Roadway System 2002*.

Figure 1—Level of Service on Freeways and Arterials

Source: Alameda County CMA LOS Monitoring Reports, 1996-2004

Note: Level of Service on all CMP Freeways and Arterial segments is between 4 to 6 PM on the average weekday

Table 2—Average Vehicle Speed in the Afternoon Peak (in miles per hour)

ROAD TYPE	CENTER-LINE MILES	1996	1998	2000	2002	2004
Arterials *	96.2	25.48	22.63	23.64	23.27	24.32
Freeways **	134.3	49.86	51.47	51.02	51.21	49.86

Source: Alameda County CMA, LOS Monitoring Reports, 1996-2004

Notes:

* Includes local arterials and conventional state highways

** Includes Interstate and other freeways

As shown in Table 3, speed data collected between 1996 and 2004 for the morning peak indicates that average speeds increased steadily from 2000 and 2004 recorded the highest average speed.

Table 3—Average Vehicle Speed in the Morning Peak (in miles per hour)

1996	1998	2000	2002	2004
44.1	42.4	38.1	42.03	46.51

Note: The number of segments monitored increased from 55 miles to 90 miles in 2002.

Table 4 compares vehicle speeds for selected segments during the morning peak. Notable observations found in the data include:

- There was high congestion in 2000 and the highest average speed measured was in 2004.
- On I-880, the segment between A Street and Marina showed a decrease in speeds in both northbound and southbound directions, while the rest of the segments in both directions showed improvements in speed.
- Southbound I-680, particularly the segment between Bernal and Mission showed significant improvement in speeds of about 20 to 30 mph. This is likely due to the opening of the southbound HOV lane in 2002 and the continued slump in the economy until 2004.

Table 4—Comparison of Speeds in the Morning Peak (in miles per hour)

SEGMENT	1996	1998	2000	2002	2004
I-880 Southbound					
• Marina to A St.	44.0	57.4	38.2	50.1	36.5
• A St. to SR-92	25.1	58.1	15.9	21.9	40.6
• SR- 92 to Tennyson	50.7	53.6	31.3	42.5	48.6
• Tennyson to Alvarado-Niles	51.6	36.3	28.8	46.2	49.1
• SR-262 to Dixon Landing	16.8	9.6	11.4	N/A	21.4
I-880 Northbound					
• Alvarado-Niles to Tennyson	33.6	42.3	32.9	31.3	33.7
• Tennyson to SR-92	42.5	49.6	45.9	41.4	53.3
• SR-92 to A St.	52.0	55.3	36.3	44.8	42.5
• A St. to Marina	49.8	52.7	57.3	55.8	44.9
I-238 Westbound					
• I-580 to I-880	22.1	20.6	18.0	22.5	20.2
I-680 Southbound *					
• Alcosta to I-580	57.7	65.3	57.7	63.0	69.0
• I-580 to Bernal	61.3	67.2	64.6	63.5	67.1
• Bernal to Niles	41.7	40.3	56.8	46.2	66.0
• Niles to Mission	11.8	12.9	17.6	28.2	61.0
I-580 Westbound					
• Portola to Tassajara	65.5	43.5	41.9	32.4	27.5
• Tassajara to I-680	58.9	60.6	63.8	44.0	50.6

Source: Alameda County CMA, *LOS Monitoring Report*, 1996-2004

ORIGIN/DESTINATION PAIRS

Since 1996, the ACCMA has compared travel times for auto and transit for ten origin/destination pairs within Alameda County (four of these pairs were added in 1998). One of these ten pairs also included travel time for bicycle. The results, shown in Table 5, indicate that transit travel times in comparison to auto have degraded. Transit travel times range between 2-5 times longer than that of auto travel. This reflects the impact of reduction in transit services.

In addition to auto and transit time, travel time was also conducted for bicycle travel for Pair 2. Similar to previous years, bicycle trips in the north part of the County continue to compete favorably with both auto and transit in 2004.

DELAY/DURATION OF CONGESTION

Caltrans annually collects information on travel time for freeways in Alameda County and the Bay Area. The number of vehicle hours of delay (VHD) indicates whether congestion is increasing or decreasing. The data is collected to identify: location of congestion; time of day that congestion occurs; and length of congestion (duration). In 2004, the highway congestion data was jointly collected by MTC and Caltrans, District 4.

Vehicle Hours of Delay (VHD)*

Table 6, Total Weekday Delay on Freeways, identifies the VHD on all Alameda County freeway facilities between 1997 and 2004. In the Bay Area, Congestion in Alameda County in 2004 account for 40% of total congestion, which is more than double that of the congestion in the second most congested county, Santa Clara. Also, congestion measured in 2004 shows a change in trend compared to the past two years since 2002. 2004 congestion data shows an increased congestion by 4,240 VHD, a 9 % increase, compared to a 24.5% reduction in congestion between 2002 and 2003. MTC stated that the increase in congestion appears to largely reflect a general improvement in the Bay Area economy in 2004. It is also likely that the construction activity on the Bay Bridge contributed to the increased congestion. Congestion spiked in 2001 with a dramatic increase of nearly 40% from 1999 to 2000. This increase was coincident with the economic boom. Following the economic downturn, congestion began to drop in 2002 and continued in 2003, likely due to a combination of the economy and additional completed roadway improvements. In terms of total delay in Alameda County, I-80 (after accounting for congestion outside Alameda County) and I-580 account for 28% VHD each closely followed by I-880 with 26% of VHD.

Table 5—Comparative Travel Times for Origin/Destination Pairs in the Afternoon Peak (minutes)

PAIR DESCRIPTION	1996	1998	2000	2002	2004
Pair 1*—Hayward to Thornton Avenue, Newark	Auto—19 Transit—68	Auto—24 Transit—88	Auto—22 Transit—92	Auto—22 Transit—79	Auto—16 Transit—90
Pair 2—Chiron Emeryville to Marin Circle, Berkeley	Auto—23 Transit—48 Bicycle—34	Auto—25 Transit—61 Bicycle—33	Auto—26 Transit—NA Bicycle—30	Auto—25 Transit—56 Bicycle—30	Auto—28 Transit—53 Bicycle—33
Pair 3*—CSU, Hayward to Delaware Way, Livermore	Auto—54 Transit—142	Auto—53 Transit—144	Auto—45 Transit—152	Auto—49 Transit—141	Auto—61 Transit—120
Pair 4—Downtown Oakland to Chapel Ave., San Leandro	Auto—38 Transit—46	Auto—35 Transit—74	Auto—29 Transit—64	Auto—32 Transit—56	Auto—41 Transit—70
Pair 5*—NUMMI Plant, Fremont to Hansen and Valley Avenue, Pleasanton	Auto—34 Transit—115	Auto—31 Transit—130	Auto—34 Transit—122	Auto—33 Transit—125	Auto—27 Transit—146
Pair 6**—Fremont from Thornton Avenue/Fremont Boulevard to Fujitsu (Hitachi) in San Jose	NA	Auto—39 Transit—129	Auto—55 Transit—104	Auto—49 Transit—118	Auto—30 Transit—94
Pair 7—Fremont to San Jose HOV Lane (future Transit Service to be added when facilities are in place)	NA	NA	Auto—35 Transit—NA	Auto—34 Transit—NA	Auto—27 Transit—NA
Pair 8*—Oakland, from Federal Building to Hansen and Valley Avenue in Pleasanton	NA	Auto—58 Transit—81	Auto—60 Transit—96	Auto—60 Transit—70	Auto—45 Transit—77
Pair 9**—Fremont, Washington Hospital to Searidge in Alameda	NA	Auto—50 Transit—86	Auto—57 Transit—74	Auto—53 Transit—70	Auto—64 Transit—123
Pair 10—Alameda Naval Air Station to College Ave. in Oakland	NA	Auto—21 Transit—51	Auto—17 Transit—47	Auto—21 Transit—45	Auto—22 Transit—45

Source: Alameda County CMA, *LOS Monitoring Reports*, 1996-2004

Note: 2004 data is not directly comparable to previous year's data in six O-D pairs as below-

* changes in destinations of these four O-D pairs.

** Pair 6 - new short transit route was used in 2004. Pair 9- due to AC transit route cuts, the available route in 2004 took long time than in previous years.

Table 6—Total Weekday Delay on Freeways (in vehicle hours of delay)

YEAR	TOTAL HOURS	% CHANGE FROM PREVIOUS YEAR
1996	35,400	38.3
1998	41,800	+18.1
1999	44,300	+ 6.0
2000	61,700	+39.3
2001	65,600	+6.3
2002	61,300	- 6.6
2003	46,300	-24.5
2004	50,540	+9

Source: Caltrans District 4, congestion monitoring information (1996-2003), MTC and Caltrans, District 4 (2004 Congestion data)

Note: Data was not collected in 1997. 2003 total hours of delay data was reported in the 2003-04 Performance Report as 49,540 VHD based on the available information, pending the release of regional congestion data by Caltrans. The correct data is 46,300 VHD as shown above.

Top 10 Congested Locations

After two years of decline in congestion in Alameda County, 2004 congestion data shows a changing trend with increased congestion compared to previous years. Table 7 shows the comparison of VHD for the top 10 locations for 2002, 2003 and 2004. There is a significant increase in daily congestion in the Top 10, which increased by a total of 8,170 VHD, a rise of 29% during the one-year period between 2003 and 2004. The level of congestion on this #1 ranked segment in 2004 (10,080 VHD) was almost the same level of congestion as in year 2000 (10,340 VHD), which was the dot com related economy boom period. Another change from 2003 is that congestion during morning peak period became higher than afternoon period (12 %) as prior to 2003. In the top 10 congested segments, total VHD during the morning was 19,250 in comparison to the 17,210 VHD measured in the afternoon.

Interstate 80 in the morning peak continues to retain its rank as the most congested corridor in Alameda County and the Bay Area Region. The vehicle hours of delay on the westbound I-580 in the morning increased in 2004 making second while eastbound I-580 in the afternoon stayed the same making it third. Of the top-10 congested corridors in Alameda, regarding congestion within Alameda County, congestion on I-80 accounts for 41% of VHD, I-580 accounts for 36% of VHD and I-880 accounts for 12%.

Of the Top 10 Congested locations, Eastbound SR 92 moved up from 8th to 4th rank with increased congestion (1650 VHD) experienced over longer segment during extended time period (85 minutes) from

2003. Eastbound SR 24 between I-580 and Caldecott Tunnel is dropped from the top 10 list. Southbound and northbound I-880, registered almost the same level of congestion and maintained the same relative places in the top 10 list.

Duration of Congestion in the Top 10

The Highway Congestion Monitoring also provides additional data on the duration of congestion for each freeway. Table 8 compares the duration of congestion for the Top 10 congested locations in Alameda County for the years 2002, 2003 and 2004. A decrease in vehicle hours of delay, without a geographic change in congestion, generally results in a decrease in the duration of congestion.

Of the six segments that were on the 2003 top 10 congestion list and made the 2004 list, with the exception of the following two locations, the congestion duration for four of them remained almost unchanged:

- I-80 westbound in the morning – 35 minutes longer
- SR 92 eastbound in the evening — 85 minutes longer

Table 7—Vehicle Hours Delayed in Top 10 Congested Corridors in Alameda County

RANK	2002				2003				2004			
	SEGMENT	PEAK	VHD		SEGMENT	PEAK	VHD		SEGMENT	PEAK	VHD	
1	WB I-80: Willow Ave. to Bay Bridge	a.m.	9,710		WB I-80: SR-4 to Bay Bridge	a.m.	6,570		WB I-80: SR-4 to Bay Bridge	a.m.	10,080 (7,882)	
2	SB I-880: Thornton to Mowry/ Stevenson to Dixon Landing Road	a.m.	8,880		WB I-580: N. Flynn Rd. to Airway EB I-580: Hopyard to W/O El Charro	a.m. p.m.	4,320		WB I-580: N. Flynn Rd. to Airway	a.m.	5,120	
3	EB I-580: Hopyard to El Charro	p.m.	7,040		EB I-80: * At Sterling St. & County Line to Gilman St.	p.m.	4,080		EB I-580: Hopyard to W/O El Charro	p.m.	4,320	
4	WB I-580: Vasco to Airway	a.m.	3,910		EB SR-24: I-580 to Caldecott Tunnel	p.m.	2,470		EB SR 92: Clawitter to I-880	p.m.	3,760	
5	SB I-680: Sunol to SR-262	a.m.	3,600		EB I-580: E/O Livermore to E/O Greenville	p.m.	2,370		EB I-80: * W. of Treasure Island to east of Powell	p.m.	2,430	
6	SB SR-84: Newark to Dumbarton Toll Plaza	a.m.	2,860		NB I-880: 1/4 mile S/O HOV off-ramp to Bay Bridge	a.m.	2,190		EB I-580: E/O Livermore to E/O Greenville	p.m.	2,370	
7	EB I-80: I-580 to Gilman	p.m.	2,520		WB I-80: * At Toll Plaza & Incline Section of SFOBB to Fifth St.	p.m.	2,180		NB I-880: W. Grand Ave. to S. of Maritime St.	a.m.	2,190	
8	NB I-880: Fremont to Tennyson	p.m.	2,360		EB SR 92: Industrial to I-880	p.m.	2,110		WB I-80: * At Toll Plaza & Incline Section of SFOBB to Fifth St.	p.m.	2,180 (1,029)	
9	NB I-880: 1/4 mile S/O HOV off-ramp to Bay Bridge	a.m.	2,190		SB I-880: Thornton to Stevenson & Automall to N/O Dixon Lndg.	a.m.	2,000		EB I-80: I-580 to Gilman	p.m.	2,150	
10	EB SR 24: SR 13 to Tunnel	a.m.	1,270		Since Rank # 2 is shared by two segments, segments up to Rank # 9 add up to Top 10.				SB I-880: Stevenson Blvd. to Mission Blvd.	a.m.	1,860	

Source: Caltrans Highway Congestion Monitoring Data (2002-2003). MTC and Caltrans, District 4 -2004

Note: * indicates portion of the segment falls outside Alameda County; (7882) shows congestion on portion of segment within Alameda County.

Table 8—Duration of Congestion in Top 10 Congested Corridors in Alameda County

RANK	2002			2003			2004		
	SEGMENT	PEAK	TIME	SEGMENT	PEAK	TIME	SEGMENT	PEAK	TIME
1	WB I-80: Willow Avenue to Bay Bridge	a.m.	05:45-09:30	WB I-80: SR-4 to Bay Bridge	a.m.	05:45-09:45	WB I-80: SR-4 to Bay Bridge	a.m.	05:50-10:25
2	SB I-880: Thornton to Mowry/Stevenson to Dixon Landing Road	a.m.	06:00-10:45	EB I-580: Hopyard to W/O El Charro WB I-580: N. Flynn Rd. to Airway	p.m. a.m.	14:55-18:40 05:45-09:45	WB I-580: N. Flynn Rd. to Airway	a.m.	05:55-09:05
3	EB I-580: Hopyard to El Charro	p.m.	14:55-18:40	EB I-80: At Sterling St. & County Line to Gilman St.	p.m.	15:15-19:05	EB I-580: Hopyard to W/O El Charro	p.m.	14:55-18:40
4	WB I-580: Vasco to Airway	a.m.	06:15-09:30	EB SR-24: I-580 to Caldecott Tunnel	p.m.	15:30-18:45	EB SR 92: Clawitter to I-880	p.m.	15:35-19:55
5	SB I-680: Sunol to SR-262	a.m.	05:55-10:45	EB I-580: E/O Livermore to E/O Greenville	p.m.	15:25-19:00	EB I-80:* W. of Treasure Island to east of Powell	p.m.	14:35-19:00
6	SB SR-84: Newark to Dumbarton Toll Plaza	a.m.	05:30-09:50	NB I-880: 1/4 mile S/O HOV off-ramp to Bay Bridge	a.m.	06:20-09:30	EB I-580: E/O Livermore to E/O Greenville	p.m.	15:25-19:20
7	EB I-80: I-580 to Gilman	p.m.	15:05-19:00	WB I-80: At Toll Plaza & Incline Section of SFOBB to Fifth St.	p.m.	16:20-19:00	NB I-880: W. Grand Ave. to S. of Maritime St.	a.m.	06:20-09:30
8	NB I-880: Fremont to Tennyson	p.m.	15:00-18:50	EB SR 92: Industrial to I-880	p.m.	15:50-18:45	WB I-80:* At Toll Plaza & Incline Section of SFOBB to Fifth St.	p.m.	16:20-19:00
9	NB I-880: 1/4 mile s/o HOV off-ramp to Bay Bridge toll	a.m.	06:20-09:30	SB I-880: Thornton to Stevenson & Automall to N/O Dixon	a.m.	07:00-10:30	EB I-80: I-580 to Gilman	p.m.	15:10-18:25
10	EB SR 24: SR-13 to Tunnel	a.m.	06:30-09:45	Since Rank # 2 is shared by two segments, segments up to Rank # 9 add up to Top 10.			SB I-880: Stevenson Blvd. to Mission Blvd.	a.m.	06:55-10:25

Source: Caltrans Highway Congestion Monitoring Data (2001-2003). MTC and Caltrans, District 4-2004

Note: * indicates portion of the segment falls outside Alameda County

ROAD MAINTENANCE

Local Jurisdictions

All 15 jurisdictions in Alameda County use the Pavement Condition Index (PCI) or similar index to rate the “health” of local streets. An average index indicates the general pavement condition within a defined network. Categories in Table 9 correspond to the indicated PCI ranges.

Table 9—Rating of Pavement Condition

CLASSIFICATION	PCI RANGE (pre-2002)	REVISED PCI RANGE
Excellent Condition	NA	PCI of 90-100
Very Good Condition	NA	PCI of 75-89
Good Condition	PCI of 70-100	PCI of 60-74
Fair Condition	PCI of 50-69	PCI of 45-59
Poor Condition	PCI of 25-49	PCI of 25-44
Very Poor Condition	PCI below 25	PCI below 25

Source: MTC, Pavement Management System

Table 10 shows the percentage of centerline miles for all roadway types (MTS and Non-MTS including arterials, collectors, and residential) in each of the classifications. Approximately, 86 percent of the all roadways were reported to be in good or satisfactory condition in 2004-05, an 8% increase from the 78 percent reported in 2003-04.

Table 10—Pavement Condition in Local Alameda County Jurisdictions

CATEGORY	% OF CENTERLINE MILES WITHIN CATEGORY					
	1996	1998	2000	2002	2003	2004
Excellent Condition	NA	NA	NA	NA	18	21
Very Good Condition	NA	NA	NA	NA	31	34
Good Condition	54.0	55.7	53.8	70.4	16	18
Fair Condition	25.9	22.8	24.7	12.8	13	13
Poor Condition	15.1	15.9	12.7	11.6	11	7
Very Poor Condition	5.0	5.6	8.9	5.2	5	2

Source: MTC, Pavement Management System.

Note: Not all jurisdictions reported data for all years. In 2004 -05, there was no data for 4% of the roadways monitored and Union City and Emeryville did not have the data for 2004.

Pavement in very poor condition represents about 2% of the roadways, a 3% reduction from last year. MTC reports that the average weighted PCI for Alameda County roadways remained 63 for the last two years.

State Facilities

Caltrans is responsible for maintaining the freeways and state highway system. Under the state system, assessment of pavement condition differs from the Pavement Condition Index. Since 1978, the types of ride (i.e., rough ride) and structural problems have been monitored in the State. The combination of these two factors is the initial step in determining if a segment should be scheduled for improvement.

As required by SB 45, Caltrans has prepared a 10-year plan for maintenance of state highways and freeways. The plan identifies roads in need of rehabilitation and a schedule for completing the work. The goals of the program are to:

- Reduce the lane mile backlog of pavement in poor condition,;
- Switch from a “worst-first” to “preventive maintenance” strategy;
- Use long life pavement strategies; and
- Integrate maintenance and rehabilitation work.

The 2004 survey of State facilities showed that 290 lane-miles of freeway and state facilities were in need of rehabilitation, which is about the same as the lane miles reported in 2003 (292 lane-miles). The number of lane miles by route in Alameda County is shown in Table 11.

Table 11—State Facility Lane Miles in Need of Rehabilitation in Alameda County

INTERSTATE AND STATE HIGHWAY	LANE MILES	OTHER STATE ROUTES	LANE MILES
Highway 13	15.3	SR-61	7.3
Highway 24	6.5	SR 77	1.4
Interstate 205	0.8	SR-84	11.5
Interstate 238	5.6	SR-92	6.2
Interstate 580	95.0	SR-112	7.1
Interstate 680	62.5	SR-123	17.6
Interstate 880	13.5	SR-185	23.5
Interstate 980	0.4	SR 238	12.8
		SR-260	1.9
		SR-262	1.1
TOTAL	199.6		90.4

Source: Caltrans, District 4

ACCIDENT RATES

As shown in Table 12, total accidents on Alameda County freeways increased slightly in 2004 (8570) by about 3% compared to 2003 (8303). The accident rate for state freeways generally increased while a few freeways showed reduction. I-680 continued to show a decline in accident rates and the lowest rate compared with other freeways. SR 24 and SR 92 showed increases in accident rates.

Table 12—Accident Data for State Freeways in Alameda County

FREEWAY	ROUTE LENGTH	TOTAL NUMBER OF ACCIDENTS					ACCIDENTS/MILLION VEHICLE MILES*					STATE AVERAGE FOR SIMILAR FACILITY
		1998	2000	2002	2003	2004	1998	2000	2002	2003	2004	
SR-13	5.36	149	128	108	117	129	1.43	1.11	0.93	1.01	1.08	0.99
SR-24	4.40	274	263	322	264	357	1.29	1.17	1.43	1.17	1.54	0.94
I-80	6.64	1252	1264	1224	1175	1244	2.61	2.30	2.23	2.14	2.06	1.26
SR-84	2.66	118	168	93	106	85	1.82	2.20	1.22	1.39	1.06	0.98
SR-92	6.59	207	288	210	196	217	1.63	2.22	1.62	1.51	1.62	1.27
I-238	1.76	137	159	143	141	160	1.98	2.27	2.05	2.02	2.08	1.02
I-580	54.14	2296	2510	2488	2378	2536	0.87	0.93	0.89	0.85	0.88	0.84
I-680	21.48	698	838	669	544	549	0.75	0.83	0.66	0.54	0.49	1.04
I-880	32.27	3185	4063	3565	3335	3244	0.98	1.65	1.40	1.31	1.24	1.06
I-980	2.03	129	57	71	47	49	0.95	0.74	0.92	0.61	0.63	0.83

Source: Caltrans, District 4

Note - Data for the one year period ending December 2003 was reported in the 2003-04 Performance Report as data for 2004. Based on information from Caltrans, this is now correctly reported as data for 2003.

* Rate based on number of fatal and injury accidents per million vehicle miles.

CHAPTER THREE **Transit**

OPERATORS

Eight operators provide transit service in Alameda County: BART, AC Transit, LAVTA, Union City Transit, ACE Commuter Rail, Capitol Corridor, Alameda-Oakland Ferry Service and Harbor Bay Ferry Service.

Bay Area Rapid Transit

The Bay Area Rapid Transit (BART) system provides rail transit service in Alameda as well as Contra Costa, San Francisco and the northern portion of San Mateo County. Approximately half of the current weekday ridership is comprised of travel between the East and West Bays.

- BART overview for Fiscal Year 2004-2005 (FY 2004-05):
- Average miles per trip, systemwide—13.54
- Number stations—43 stations total, including 19 stations in Alameda County
- Number of weekday routes—5
- Weekday headways—15 minutes or more frequent during peak periods
- Evening service number of routes—3
- Evening service headways—20 minutes

The average age of a rail car was 8.7 years in 2005. The average life expectancy of a car is 20 to 25 years for new cars and 15 years for rehabilitated cars.

AC Transit

AC Transit operates three main types of bus service: East Bay local service, TransBay service and the joint Dumbarton service with Union City and Palo Alto.

East Bay Local Service

The East Bay Local Service offers local stops within the AC Transit service area, which includes most of Alameda County and West Contra Costa County. This service includes supplemental school service during the school months. It also includes community based service that provides sporadic and direct mid-day service from community centers to shopping and other services.

TransBay Service

The TransBay Service operates from the East Bay to the TransBay Terminal in downtown San Francisco.

Dumbarton Route

AC Transit participates in a jointly funded Dumbarton (DB) route across Dumbarton Bridge between Union City and Palo Alto. Until April 2005, it was operated by a private operator. In April, AC Transit resumed direct operation of the service as a contract operator.

AC Transit operated the following routes in FY 2004/05:

- 66 East Bay local routes including 3 East Bay limited routes
- 6 Routes offering Community Destination-Based Service
- 1 Welfare to Work Route, providing service to assist CalWORKS recipients return to work
- 1 Rapid Line that provides service from Jack London Square in Oakland to Contra Costa College in San Pablo, making only limited stops along San Pablo Avenue
- 26 TransBay routes including their distinct derivations, with service across the Bay Bridge, the San Mateo Bridge and the Dumbarton Bridge.

The average age of the AC Transit bus fleet in FY 2004/05 was 5.7 years. The average life expectancy of a bus is 12 years.

Livermore Amador Valley Transit Authority

Livermore Amador Valley Transit Authority (LAVTA) provides:

- Local service to the cities of Dublin, Livermore and Pleasanton and to the adjacent unincorporated areas of Alameda County;
- WHEELS dial-a-ride, an American Disabilities Act (ADA)-mandated demand responsive service to elderly and disabled persons in Dublin, Pleasanton and Livermore;
- Direct Access Responsive Transit (DART), a general public deviated fixed route service during off-peak hours and non-weekdays, with one or two fixed times;
- Limited fixed-route express bus service to Pleasant Hill;
- School service; and
- Subscription service, which connects the Dublin, Pleasanton and Livermore area with Intel in Santa Clara and Lockheed Martin in Sunnyvale.

LAVTA's active fleet in FY 2004/05 included:

- 75 fixed route buses, including a pool of 9 buses used for subscription and express routes;
- 18 paratransit vehicles;
- Weekday service between 4:30 a.m. and 12:52 a.m., with reduced service hours on weekends; and
- Headways during peak periods—15 to 60 minutes depending on the route.

LAVTA took delivery of 34 new coaches in 2003/04, so it currently has a combination of an old and new fleet.

Union City Transit

Union City Transit provides fixed route and paratransit services within the city limits of Union City. It contracts with MT Transportation for operations and maintenance. Union City Transit coordinates its service with AC Transit, BART, and the Dumbarton Express bus. Union City Transit offers the following service:

- Weekday service between 4:15 a.m. and 9:20 p.m.
- Saturday service between 7:00 a.m. and 7:30 p.m.
- Sunday service between 8:00 a.m. to 6:30 p.m.

Union City Transit has an active fleet of 15 fixed route buses and five paratransit vehicles. The average age of the fleet is 7 years and the life expectancy is 7 to 12 years depending on the vehicle.

Alameda/Oakland Ferry

Alameda/Oakland Ferry provides service between San Francisco's Ferry Building, San Francisco's Pier 39, Alameda's Main Street terminal and Oakland's Jack London Square. The City of Alameda administers the service. Weekday service includes 11 commute and four midday departures. Service hours are 6:00 a.m. to 9:30 pm with one hour headways during the peak period. Weekend schedules vary seasonally with nine departures per day during the summer. Seasonal service is offered from Alameda, Oakland and Angel Island State Park, as well as from SBC Park for Giants games.

Alameda Harbor Bay Ferry

Alameda Harbor Bay Ferry provides passenger ferry service between Alameda's Bay Farm Island and the San Francisco Ferry Building. Weekday service consists of three morning and four evening commute period trips.

ACE Commuter Rail

ACE Commuter Rail provides service between Stockton and San Jose during the weekday morning and evening commute periods only. The service operates three round trips per day running approximately one every hour between the commute hours of 4:15 a.m. and 8:56 a.m. and 6:42 p.m. and 8:53 p.m. Four stations are in Alameda County: Fremont, Pleasanton, Livermore and Vasco Road.

Capitol Corridor

Capitol Corridor service is an Intercity Rail Service managed by the Capitol Corridor Joint Powers Authority (CCJPA). The service provides intercity connections between the Bay Area and the Auburn-Sacramento area, with connections running through Oakland to San Jose. Twenty four daily trains run between Oakland and Sacramento, including eight that also make connections between Oakland and San Jose. The average lifespan of a Capital Corridor train is 20 years with regular overhauls. The majority of the Capitol Corridor ridership is from the Sacramento area into the Bay Area. In Alameda County, the Capitol Corridor stops at Berkeley, Emeryville (which serves as a connection to San Francisco via motor coach service), Oakland, Hayward, and Fremont. The Capitol Corridor is supported by operating funds from the State of California. The rolling stock is owned by the State as well. The CCJPA manages the service and contracts with Amtrak for operations and maintenance. The CCJPA provides free transit transfer passes for use on AC Transit East Bay buses for customers and reimburses AC Transit for each transfer used.

PERFORMANCE MEASURES

This section analyzes the following performance measures that track how the transit system has performed in Alameda County over the past year:

- Routing—the number of passengers being served systemwide (reported numbers are for within Alameda County). This is measured in the amount of surface area covered by trackway for rail and roadway for bus services, the intensity of use of these surfaces and number of passengers served.
- Frequency—how often transit service is provided by route.
- Coordination of Transit Services—the number of transit routes serving major Alameda County transportation terminals.
- Ridership—passenger boardings are measured in total transit ridership in Alameda County; ridership per revenue vehicle hour and revenue vehicle mile and weekday passenger boardings. Data is also included showing a comparison of total systemwide ridership for transit operators operating within and beyond Alameda County as well as others operating solely outside Alameda County.

- *Vehicle Maintenance*—this is a measure of how often transit operators repair their vehicles. It is measure for bus operators as miles between mechanical road calls and for rail operators as mean time between mechanical failures.

Routing

Routing is used to determine how many passengers are being served by transit systemwide. To do this, three measures are used:

1. how much surface (roadway or trackway) is covered by transit (directional route miles);
2. the amount and intensity of service provided on that surface area (service coverage, or total vehicle miles divided by directional route miles); and
3. total passengers.

Table 13 summarizes the average directional route miles, service coverage and passenger boardings for five transit operators in Alameda County: AC Transit, Union City Transit, LAVTA, ACE and BART. As the table indicates, the intensity of transit service and the number of transit riders has remained steady over the past year. Likely, this reflects a response to the recent stability in the economy and is consistent with trends over the past decade, in which transit service has correlated with shifts in the economy. The number of people served, routes provided and intensity of use on the routes have increased during good economic times, with a peak in 2001/02, and conversely have reduced during leaner economic times.

Table 13 shows that, although transit service and ridership remained stable over the past year, surface miles covered by transit increased by 10 percent during this time, returning to FY 2001/02 levels. No new rail service was added last year. Thus, this increase reflects the ability of bus operators to adjust service in response to changes in the economy.

Table 13—Transit Routing¹ within Alameda County

MEASURE ²	YEAR						
	95/96	97/98	99/00	01/02	02/03	03/04	04/05
Directional Route Miles ³	1,375	1,527	1,706	1,811	1,773	1,698	1,874
Service Coverage (000) ⁴	346.1	335.3	353.5	362.9	318.3	348.3	344.9
Total Annual Passengers Boardings (000)	84,073	85,218	93,159	97,031	89,533	100,024	100,315

Notes:

¹ Source: Statistical Summary of Bay Area Transit Operators, Metropolitan Transportation Commission, 2003. 2000/01 through 2004-05 data is provided by the transit operators by special request.

² The summary totals include data from the following transit operators in Alameda County: AC Transit, Union City Transit, LAVTA, ACE and BART. See Appendix D tables for a breakdown by operator.

³ Directional Route Miles is a measure of surface area (roadway and trackway) served. For example, a one-mile segment of road over which transit operates in both directions would be reported as two miles, while a one-mile segment traversed by vehicles six times in the same direction would be counted as one-mile.

⁴ Service Coverage is Total Vehicle Miles Divided by Directional Route Miles. It is a measure of the amount of service provided, including number of routes and frequency, on the transit system. For instance, a one-mile segment traversed by vehicles six times in the same direction would be counted as six-miles.

Compared to last year's data, transit routing changes in Alameda County include:

- A 10 percent increase in surface miles covered by transit (1,698 to 1,874 directional route miles);
- Stable service provided (an approximately 1 percent decrease); and
- Stable systemwide passenger boardings (less than 1 percent increase).

For FY 2004-05, the average ridership on transit in Alameda County remained relatively stable, with less than one percent increase compared to the previous fiscal year. Historical data by operator is shown in Appendix D.

Over the past decade, transit service has grown overall. New transit service in south and east county as well as additional in transit service in north county, particularly the addition of ACE Commuter Rail in 1998, the extension of BART to Dublin-Pleasanton in 1997 and to San Francisco Airport in June 2003, contributed to this growth.

LAVTA maintained its service levels with minor improvements to week-end service¹. AC Transit continued to make modifications to its service routes to improve on time performance, service reliability and service efficiency.

¹ LAVTA's increase in route miles in 2004/05 is partly due to refined surveying measures through the recent institution of the Auto Vehicle Locator System (AVL), as opposed to the previous odometer survey in 1999, which was followed by manual updates. The 2004/05 number is an indication of increased route miles between 1999 and 2004/05, rather than just over the past year.

Frequency

Frequency is measured by how often transit service is provided by route. Information is provided in Table 14 primarily for the peak commute hours, but frequency data for the midday and evening periods is also shown. Service hours vary by operator (i.e., LAVTA—4:30 a.m. to 1:00 a.m.; Union City Transit—4:15 a.m. to 9:20 p.m.; AC Transit—5:00 a.m. to 12:00 a.m.¹; BART—4:00 a.m. to 12:00 a.m.). Data presented are for activity through FY 2004/05.

For bus service, Table 14 shows the number of bus routes in Alameda County by arrival rate or headways. Changes in service are primarily due to changes in service by AC Transit and LAVTA. AC Transit continued to make modifications to their service routes to improve on-time performance, service reliability, and service efficiency. In addition to minor modifications to week-end service, LAVTA added a new expansion route serving the City of Dublin and the growing development in east Dublin. The Route 1C operates on a peak basis and provides service to the Dublin Ranch properties from the Dublin/Pleasanton BART station.

Overall, rail operators have had consistent frequency of service in the past year. For buses, more frequent service is available in the 45 to 60 minute peak and mid-day service and up to 25 minute evening service.

During the peak commute hours, 89 percent of Alameda County bus routes (93 routes) arrive every 40 minutes or less and 24 percent arrive every 15 minutes or less. During the midday and evening periods, 45 percent and 12 percent of buses, respectively had less than 40 minute headways, while 17 percent of midday service and 4 percent of evening service had less than 15 minute headways. Although the number of bus routes during this period reduced since last year, the frequency has remained relatively consistent for the peak period. However, frequency of bus service has increased by 7 percent for the less than 15 minute frequency and 44 percent during mid-day. During this time, bus service frequency has increased by 2 buses in the 15 minutes or less headways and reduced by 8 buses in the less than 40 minute headways for evening service.

BART serves 19 Alameda County stations. Depending on the trip origin or destination, service is provided every 2 ½ to 15 minutes during the peak commute periods. Three transfer points at MacArthur and 12th Street in Oakland, and Bay Fair Station in San Leandro provide transfers between BART lines.

Twelve Amtrak Capitol Corridor daily round trip trains (24 trains, 12 eastbound and 12 westbound) serve Alameda County Amtrak stations located in Berkeley, Emeryville, Oakland, with four daily-round trips south of Oakland to serve Hayward and Fremont-Centerville. During the peak commute hours, six trains

Table 14—Transit Service Frequency in Alameda County

HEADWAYS/ DIRECTION (minutes)	PEAK PERIOD ²												MIDDAY ³												EVENING ⁴											
	97/ 98	99/ 00	00/ 01	01/ 02	02/ 03	03/ 04	04/ 05	97/ 98	99/ 00	00/ 01	01/ 02	02/ 03	03/ 04	04/ 05	97/ 98	99/ 00	00/ 01	01/ 02	02/ 03	03/ 04	04/ 05	97/ 98	99/ 00	00/ 01	01/ 02	02/ 03	03/ 04	04/ 05								
	NUMBER OF ROUTES																																			
Bus																																				
6-15	51	44	43	39 ²	37	25	25	9	8	10	10	9	12	9	1	2	10	0	2																	
16-25	23	15	12	19	15	16	16	7	9	8	6	7	3	7	6	7	15	0	2																	
30-40	68	77	78	63	71	52	52	60	62	61	56	57	40	60	49	53	49	45	37																	
45-60	8	15	13	7	12	12	12	13	25	19	15	19	17	13	20	22	17	28	11																	
90	—	1	3	1	1	0 ³	0 ³	—	2	4	3	2	1	—	2	1	2	0	0																	
BART	NUMBER OF STATIONS																																			
2.5-6 ⁶	6	4	4	6	10	10	10	4	4	4	6	9	9	4	4	4	0	0	0																	
7-15 ⁷	11	12	12	11	9	9	9	12	12	12	13	10	10	12	12	12	6	9	9																	
16-20	2	3	3	2	0	0	0	1	1	1	4	0	0	1	1	1	13	10	10																	
Amtrak/Capital Corridor	NUMBER OF TRAINS ⁸																																			
Eastbound	3	3	2	4	4	4	4	2	3	4	4	4	4	1	1	2	2	4	4																	
Westbound	2	2	4	4	4	4	4	3	4	3	3	4	4	3	1	2	2	4	4																	
ACE ⁹	NUMBER OF TRAINS (peak period service only)																																			
	97/98				99/00				00/01			01/02			03/04			04/05																		
Eastbound	NA				3				3			3			3			3																		
Westbound	NA				3				3			3			3			3																		

³ LAVTA has an additional 17 routes with greater than 1 hour frequency.

Notes:

¹ Source: Published transit service schedules: BART; AC Transit; LAVTA; Union City Transit; ACE; Capitol Corridor/Amtrak. FY 2001/02 bus service includes AC Transit, while FY 2003/04 and FY 2004/05 bus service includes AC Transit and LAVTA. AC Transit service includes Trans Bay service.

² Peak hour service is defined as 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.

³ Midday service is defined as 9:00 a.m. to 4:00 p.m.

⁴ Service hours vary by operator (i.e., LAVTA—4:30 a.m. to 12:52 a.m.; Union City Transit—4:15 a.m. to 9:20 p.m.; AC Transit—5:00 a.m. to 12:00 a.m.; BART—4:00 a.m. to midnight.).

⁵ BART has 19 stations in Alameda County: Fremont, Union City, South Hayward, Hayward, Bayfair, San Leandro, Coliseum/Oakland Airport, Fruitvale, Lake Merritt, Oakland City Center/12th Street, 19th Street, MacArthur, Rockridge, Ashby, Berkeley, North Berkeley, West Oakland, Castro Valley and Dublin/Pleasanton.

⁶ Two sets of stations are served by three lines. MacArthur, 19th Street, and 12th Street stations are served by the Pittsburg/Bay Point-Daly City/Colma, Richmond-Daly City/Colma, and Richmond-Fremont lines. Bay Fair, San Leandro, Coliseum/Oakland Airport, Fruitvale, and Lake Merritt stations are served by the Richmond-Fremont, Fremont-Daly City, and Dublin Pleasanton-Daly City lines. One station (West Oakland) is served by four lines (Pittsburg/Bay Point-Daly City/Colma, Richmond-Fremont, Fremont-Daly City, and Dublin/Pleasanton-Daly City).

⁷ Each of the four lines that use the TransBay Tube (Pittsburg/Bay Point-San Francisco Airport (SFO)/Millbrae, Richmond-Daly City San Francisco Airport (SFO)/Millbrae, Dublin/Pleasanton-Daly City, and Fremont-Daly City) operate with 15 minute headways, except for the Pittsburg/Bay Point San Francisco Airport (SFO)/Millbrae- line, which operates with 7 minute headways during the peak hours.

⁸ Capitol Corridor serves five stations in Alameda County: Fremont-Centerville, Hayward, Oakland, Emeryville, and Berkeley.

⁹ ACE has four stations in Alameda County: Fremont, Pleasanton, Livermore, Vasco Road.

¹⁰ The BART numbers from past years were adjusted this year to accurately reflect station totals in Alameda County.

pass through Alameda County, three eastbound and westbound in each of the morning and evening peak periods.

Three round trip Altamont Commuter Express (ACE) trains (six trains, three westbound from Stockton to San Jose in the morning peak period and three eastbound from San Jose to Stockton in the evening period) serve Alameda County. Service began in October 1998 and four stations are located in Alameda County: Vasco Road, Livermore Transit Center, Pleasanton, and Fremont.

Coordination of Transit Services

In order to measure the coordination of transit service in Alameda County, the number of transit routes serving major Alameda County transportation terminals was counted for the peak commute period as of October 2005. Figure 2 shows the number of transit lines (i.e., BART, AirBART, AC Transit, Union City Transit, LAVTA, and ACE) at major transportation terminals in Alameda County, including BART, AMTRAK and ACE stations, the Dublin and Livermore Transit Centers, and the Oakland and Alameda ferry terminals.

In 2003, BART extended its service to San Francisco Airport and Union Landing (Union City) Transit Center was added.

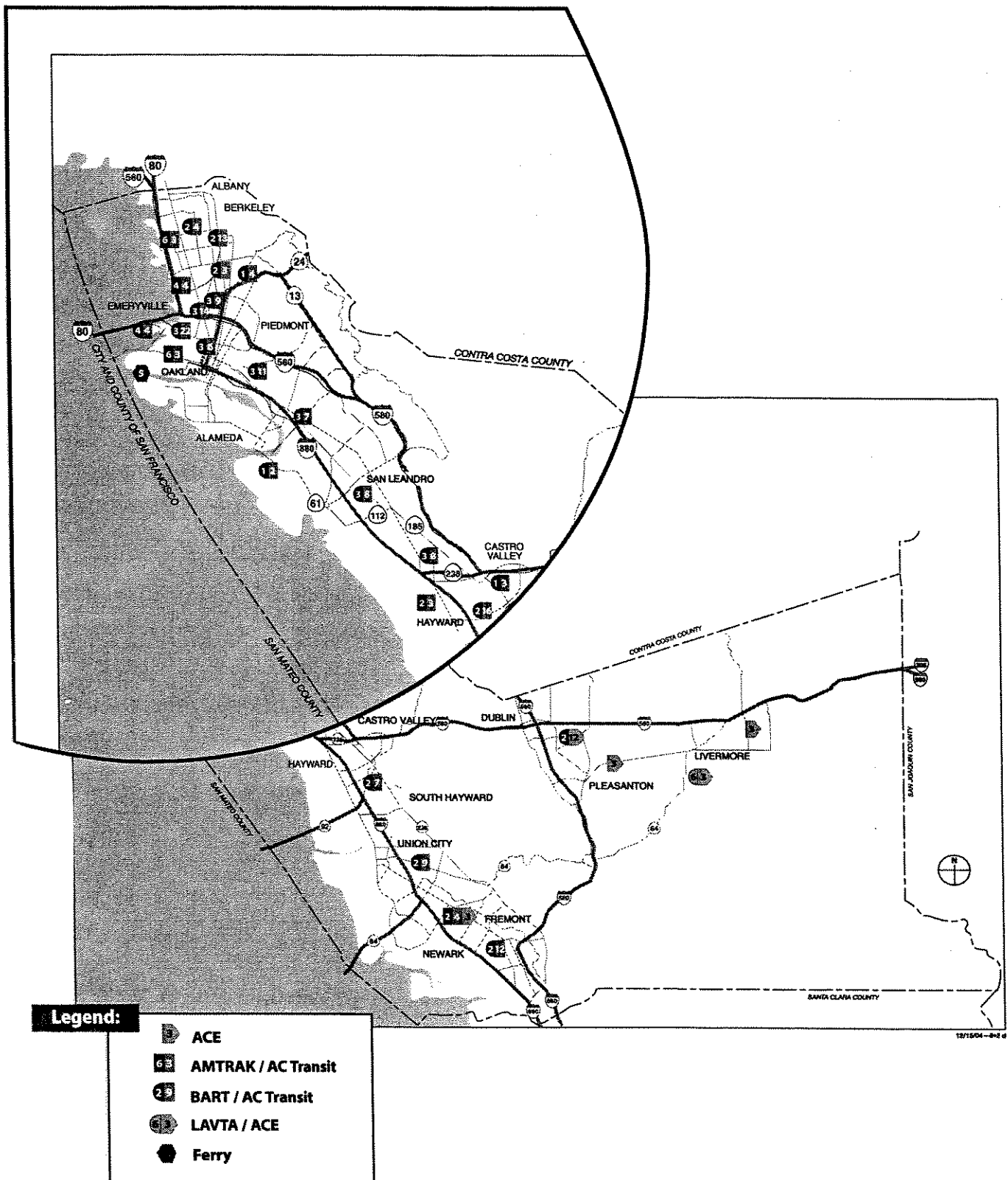
The ACE trains have been operating service between Stockton and San Jose in the morning and afternoon peak periods since 1998. The downtown Livermore ACE station, as well as LAVTA and ACE are at the Livermore Transit Center.

LAVTA previously restructured service to accommodate the ACE schedule at the four Alameda County Stations (i.e., Vasco, Livermore Transit Center, Pleasanton, and Fremont). The past year saw the productivity levels of the LAVTA/ACE shuttle route continue to increase to an annual level of 21.9 passengers per hours versus 16.6 in the previous year.

In FY 2004/05, AC Transit continued to adjust their schedules to improve on-time performance and increase service productivity. In August 2004, AC Transit introduced TransBay Line U, connecting Fremont and Newark with Stanford University. Line U was specifically designed to meet with all six scheduled ACE trains at the Fremont Centerville station.

The greatest number of transfer opportunities is found predominantly at BART stations: Fremont (14 lines), Hayward (18 lines), 12th Street (25 lines), 19th Street (17 lines), Fruitvale (14 lines), and Downtown Berkeley (15 lines).

Figure 2—Transit Lines Serving Major Alameda County Transportation Terminals



Ridership

Transit ridership can be reported in a number of ways. For purposes of this report, ridership is provided as:

- Systemwide Passenger Boardings,
- Passenger Boardings per Revenue Vehicle Mile,
- Passenger Boardings per Revenue Vehicle Hour, and
- Weekday Passenger Boardings.

Systemwide Passenger Boardings for Alameda County are shown in Table 15. In order to provide a context for the patronage figures, Appendix D includes ridership for operators who provide service to Alameda County and those who provide service to other parts of the Bay Area as well as the total Bay Area system.

By transit operator, the systemwide ridership changes over the last year are as follows:

- | | |
|---------------------------------|---|
| • AC Transit | stable (0.07 percent decrease in service) |
| • BART | stable (1.1 percent increase) |
| • LAVTA | stable (0.1 percent increase in service) |
| • Union City Transit | 11 percent decrease in service |
| • ACE Commuter Rail | 4.1 percent increase in service |
| • Alameda Harbor Bay Ferry | 25 percent reduction in service (due to storm damage) |
| • Alameda/Oakland Ferry Service | 8.1 percent reduction in service |

The 2004/2005 statistics are affected by the following service changes:

- LAVTA— Maintained current service levels with minimal improvements for weekend service.
- AC Transit— AC Transit continued to identify and adjust services to meet demand and to create more efficient service delivery, and implemented TransBay Line U in FY 2004/05.
- BART—New service to San Francisco Airport (SFO) began June 22, 2003.
- ACE—No new service changes.
- Ferries—Alameda Harbor Bay Ferry was out of service for three months due to repair of storm damage to the Harbor Bay Dock.

- UC Transit—Eliminated one route and made adjustments to routes and schedules to improve productivity and on-time performance.

Passenger Boardings

As shown in Table 15, in the last year, the total annual systemwide passenger boardings for transit in Alameda County has remained stable at approximately 100 million annual riders. This total includes stability among the riders with the exception of reduced ridership for Union City Transit and the Alameda-Oakland Ferry and Alameda Harbor Bay Ferry and an increase in ridership for ACE. Over the past five years, systemwide ridership in Alameda County peaked in FY 2000/01. This was followed by a drop through 2002/03, and a rise in FY 2003/04, which was maintained through last year. These fluctuations have likely reflected the recent shifts in the economy as well as the addition of BART's San Francisco extension in 2003.

For three of the County's transit providers, ridership was also influenced by changes in the weather last year. Although LAVTA ridership was stable compared to the previous year, this was a combination of increases for most of the year, followed by a drop during heavy rains in January and February. The Alameda Harbor Bay Ferry experienced a reduction in ridership by 25 percent due to the service being closed for three months to repairing storm damage to the dock. Although ACE's on time performance was affected by the increased use of their tracks by freight trains re-routed due to winter storms in Southern California, they still had a slight increase in ridership (by 4 percent), which may be attributed to incentives they instituted to maintain their riders after this period.

Table 15—Total Annual Passenger Boardings (in 000's)

OPERATOR	95/96	97/98	98/99	99/00	00/01	02/03	03/04	04/05
AC Transit	56,455	55,695	57,788	59,322	62,104	54,612	64,456	64,408
BART (rail only)	26,165	27,565	28,723	31,364	34,601	31,892	32,586	32,946
LAVTA	981	1,433	1,594	1,836	2,201	1,922	1,936	1,938
Union City	472	525	493	504.7	555.4	442	430	381
ACE	NA	NA	90	132	293	665	616	641
Alameda-Oakland Ferry	383.8	499.2	477.3	549	519	426	420	382.1
Alameda Harbor Bay Ferry	104.1	86	106.6	128	130	106	112	84
TOTAL	84,561	85,803	89,272	93,836	100,403	90,065	100,556	100,780

1. MTC, Statistical Summary of Bay Area Transit Operators October 2003. FY 2001/02-2004/05 data is provided by the transit operators by special request.

2. AC Transit data adjusted to deduct Contra Costa County. Based on hours of operating service in Alameda County and population served by AC Transit, total numbers were reduced by 12 percent. Total Systemwide Passenger Boardings were taken from Table 13 and reduced by 12 percent to represent Alameda County.

3. BART data adjusted to represent Alameda County passenger boardings by annualizing the Average Weekday Passenger Boardings within Alameda County found in Table 18. An annualization factor of 290 was used for fiscal years 1990 (FY90) through FY00 and 291 for FY01 through FY 02, 296 for FY02 through FY04 and 298.5 for FY05.

Alameda County Transit in Comparison to Systemwide Transit

For transit operators in Alameda County that serve areas beyond the county, such as BART and AC Transit, systemwide ridership trends were very similar to Alameda County trends. (See Appendix D) Systemwide ridership was stable at 166,109 riders, which represented a less than one percent increase on average from the previous year. As in Alameda County, systemwide trends over the past five years followed shifts in the economy.

Passenger Boardings per Revenue Vehicle Mile

Passenger Boardings per Revenue Vehicle Mile, shown in Table 16, is the number of passengers divided by the number of miles the transit vehicle is in revenue service. The measure excludes miles traveled to and from storage facilities and other deadhead travel.

Table 16—Total Annual Systemwide Passenger Boardings (per revenue vehicle mile)

OPERATOR	95/96	97/98	98/99	99/00	00/01	02/03	03/04	04/05
AC Transit	2.9	3.3	3.3	2.7	3.1	3	2.7	3.1
BART (rail only)	1.7	1.5	1.6	1.7	1.8	1.7	1.6	1.7
LAVTA	0.9	0.9	1	1.03	1.16	1.04	1.04	1.15
Union City	1.1	1.2	1.1	1.04	1.11	1.13	1.2	0.72
ACE	NA	NA	0.55	1.19	1.55	1.09	0.79	0.86
Alameda-Oakland Ferry	7.3	7.6	10.6	12.2	11.6	9.36	7.39	7.82
Alameda Harbor Bay Ferry	3.3	4.2	5.4	6.5	6.3	6.15	4.63	7.41
AVERAGE	3.44	3.74	3.36	3.77	3.80	3.35	2.76	3.25
Non-Alameda County Operators								
CCCTA	1.3	1.2	1.3	1.3	1.3	NA	NA	NA
SF Muni						NA	NA	NA
- Motor Bus	7.4	7.5	7.5	7.5	7.8	NA	NA	NA
- Trolley Bus	11	11	11.3	11.1	11.1	NA	NA	NA
- Light Rail	10.4	9.9	10.3	8.9	9.6	NA	NA	NA
SAM Trans	2.5	2.4	2.1	2.4	2.2	NA	NA	NA
SCTVA-Bus	2.3	2.5	2.6	2.5	2.5	NA	NA	NA
SCTVA-Rail	3.6	3.3	3.3	3.1	3.3	NA	NA	NA
Bay Area System	NA	3.2	3.1	3.1	3.1	NA	NA	NA

Source: MTC, Statistical Summary of Bay Area Transit Operators, October 2001. FY 2000/01 to 2004-05 data is provided by the Alameda County transit operators by special request and by National Transit Database Report FY 04/05

AC Transit experienced a slight increase in passenger boardings per revenue vehicle mile over the past year, with the addition of Line U from Fremont to Stanford University in August 2004 and the resumption of direction operation of Line DB/DB1, the Dumbarton Express in April 2005. Both lines operate along corridors and in cities not served in the previous year.

In the last year, minor changes in week-end service by LAVTA and minor route adjustments by AC Transit have contributed to slightly increased passenger boardings per revenue vehicle mile.

Passenger Boardings per Revenue Vehicle Hour

Passenger Boardings per Revenue Vehicle Hour (RVH), as shown in Table 17, is the number of passengers per the total number of hours that each transit vehicle is in revenue service, including layover time. The measure excludes hours consumed while traveling to and from storage facilities and during other deadhead travel.

The data for the past decade is relatively consistent for AC Transit. Most recently, monetary savings realized from service adjustments undertaken late in FY 2003/04 reversed a decline in productivity over the past two fiscal years, as less productive service was restructured or eliminated. LAVTA fluctuated overall over the decade with a resulting increase to date, as a result of adding service. BART and ACE have been fairly stable over the past three years.

Weekday Passenger Boardings

Table 18 shows the total number of weekday passenger boardings for AC Transit, BART and ACE within Alameda County. Given the way data is collected and reported, it cannot be determined if the boardings are Alameda County residents. The data indicates that weekday boardings for the rail operators follow the overall annual trend of peaking in 2000/01 at the height of the economic boom, followed by a drop, then a rise, and stabilized since 2002/03.

Table 17—Total Annual Systemwide Passenger Boardings
(per revenue vehicle hour)

OPERATOR	95/96	97/98	99/00	00/01	01/02	02/03	03/04	04/05
AC Transit	36.2	38.7	37.4	36.3	34.5	30.45	31.2	36.1
BART (rail only)	58.7	51.9	59	65.1	62.6	57.2	53.8	56
LAVTA	13.8	14.5	16.3	17.9	15.5	14.6	15.7	16.9
Union City	15.2	16.9	14.1	14.4	12.7	11.78	11.6	10
ACE	NA	NA	44.7	55.6	39.9	32.8	31.2	32.3
Alameda-Oakland Ferry	74.3	88.4	107.2	89.7	76.6	94.9	86.85	79.39
Alameda Harbor Bay Ferry	35.7	42.3	94.5	91.8	84.9	76.9	68.02	76.61
AVERAGE	38.98	42.12	53.31	52.97	46.67	45.52	42.62	43.9
Non-Alameda County Operators								
CCCTA	16.4	17.1	17.1	16.5	15.9	NA	NA	NA
SF Muni								
• Motor Bus	68.3	68.3	70	68.3	63.9	NA	NA	NA
• Trolley Bus	77.7	78.5	77.3	79.6	74.6	NA	NA	NA
• Light Rail	101.2	102.9	87.8	90.2	83.9	NA	NA	NA
SAM Trans	31.1	27.4	28.7	28.7	26.0	26.0	NA	NA
SCTVA-Bus	34.3	34.2	31.9	29.2	29.6	NA	NA	NA
SCTVA-Rail	51.8	51.5	48.6	69.9	46.9	NA	NA	NA
Bay Area System	49.2	48.9	49.7	54.6	48.7	NA	NA	NA

Note: FY 2000/01-2004-05 data is provided by the transit operators by special request and by National Transit Database

Table 18—Average Weekday Passenger Boardings*

OPERATOR**	95/96	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05
AC Transit ¹	181,061	183,285	194,430	197,626	207,887	199,258	181,509	185,035	184,575
BART	91,797	96,583	99,045	109,728	118,904	111,882	107,742	110,087	111,303
ACE	NA	NA	506	513	505	463	2,619	2,425	2,425
TOTAL	272,858	279,868	293,981	307,867	327,296	311,603	291,870	297,547	297,087

Source: AC Transit, BART and ACE staff and FY 04/05 National Transit Database

* Boardings are listed as unlinked trips (i.e., transfers are included).

** All of the service provided by LAVTA, Union City, Oakland-Alameda Ferry is included within Alameda County and can be found in Table 15.

¹ Based on total weekday passenger boardings reduced by 12 percent to reflect Alameda County boardings only. The 12 percent reduction is based on hours of operating service in Alameda County and population served by AC Transit.

Vehicle Maintenance

Rail and bus transit operators have different indicators of vehicle maintenance.

- Bus operators report on Miles Between Mechanical Road Calls
- BART and ACE report on the Mean Time Between Failures

For all transit modes, the fewer miles between road calls or failures can be a sign of an aging fleet. A larger number of miles generally indicates a newer fleet or a higher proportion of newer vehicles, and can also indicate improved training of mechanics maintaining the fleet.

Service calls are for a variety of reasons including mechanical problems, farebox issues, and broken lights. They include service calls to the dispatch yard, the bus terminals (BART) as well as vehicles in-route and vehicles that are either in-service or about to go into service.

As shown in Table 19, LAVTA reported 13,540 miles between mechanical road calls in FY 2003/04 and 28,797 in FY 2004/05, a 112 percent improvement in the number of miles between road calls in one year. They added a new fleet of 34 new buses in 2003, which require less frequent maintenance than the remaining, older buses in the fleet.

AC Transit reported 6,300 miles in FY 04/05. This represents a slight decrease in the number of miles between mechanical road calls in the past year. The main reason for maintaining a fairly stable improvement in road calls since 2002/03 at AC Transit was a major investment in mechanics' training. They instituted a mandatory apprenticeship program for all new and existing mechanics, which required the mechanics to take formal and on-the-job training. Also, the purchase of new buses in the previous two fiscal years resulted in retiring older less reliable vehicles.

Table 19—Miles between Mechanical Road Calls for AC Transit and LAVTA

OPERATOR	95/96	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05
AC Transit	3,670	6,609	7,965	8,195	6,975	7,123	4,400	6,600	6,300
LAVTA	25,107	24,034	10,467	10,273	25,985	5,304	8,691	13,540	28,797

Source: AC Transit, Short Range Transit Plan, 1994-2003 and 1995-2005 and LAVTA staff. And AC Transit Internal Reports for FY 04/05

BART and ACE collect data for determining the average time between service delays. Delays can be caused by personnel or by mechanical failures. Table 20 indicates that the BART system has improved steadily over the past decade. Although the fleet has been aging, BART has been able to extend the life of individual cars by localizing specific problems such as door failures. With this knowledge, a program of door rehabilitation was instituted which reduced the amount of service delays. BART rehabilitated several of its rail cars in 2002, which can be seen in their increased time between service delays for the cars.

Table 20—Mean Time between Service Delays for BART and ACE (annual average)

OPERATOR	1996	1998	1999	2000	2001	2002	2003	2005
BART	913	1,289	1,295	1,236	1,311	1,597	1,901	2,016
ACE	NA	NA	2,395	3,620	4,604	3,357	3,784	NA

Source: BART and ACE staff.

Major Mechanical System Failures

The Federal Transit Administration defines a major mechanical system failure as a mechanical problem in which the vehicle does not complete its scheduled revenue trip or does not start its next scheduled revenue trip because actual movement is limited or because of safety concerns. The failure may occur in revenue service including layover/recovery time or during deadhead. Transit agency employees or outside

personnel may repair the vehicles. Revenue vehicle system failures are reported as major mechanical system failures if they limit actual vehicle movement or are safety issues.

Examples of major bus failures include breakdowns of air equipment, brakes, doors, engine cooling system, steering and front axle, rear axle and suspension and torque converters. Major BART vehicle systems include automatic train operation, brake, auxiliary electric, door, propulsion and electric couplers. BART had 1,008 major system failures in FY 2003/04, which decreased 16 percent in Fiscal Year 2004/05. Major system failure information for other operators was not available.

OBSERVATIONS ABOUT THE TRANSIT SYSTEM

Transit ridership remained stable in FY 2004/05. Ridership follows recent economic stability after the peaks and dip in the economy in 2000 and 2001.

Recent storms affected three transit providers the past year with LAVTA ridership decreasing over a two month period after winter storms, ACE reducing on-time performance due to storms in Southern California that resulted in ACE sharing increased freight traffic on its trackways, and the Alameda Harbor Bay Ferry reducing services to repair damage to its dock from spring storms.

Concurrently, bus service has been able to be responsive to changes in the economy by increasing the frequency of arterial transit service, as needed, to concentrate service on heavily patronized routes. Service concentration seems to have created a system that is simultaneously more responsive, more efficient and more effectively coordinated. Additionally, over time, there has been service expansion particularly on the rail lines with the opening of BART to San Francisco Airport in 2003.

CHAPTER FOUR **Bicycle**

Implementation of the Countywide Bicycle Master Plan is a performance measure to indicate the degree to which planned bicycle facilities are developed throughout the county. The Countywide Bicycle Plan was adopted by the CMA Board in July 2001. The CMA is currently in the process of updating this Countywide Bicycle Plan. The key components of the focused update are to:

- Revise and correct maps and appendices to add new projects, remove completed or deleted projects, and modify alignments on the Countywide Bicycle network.
- Identify facilities that have been completed since the Plan was adopted and develop a mechanism to track future changes.
- Develop a fiscally constrained list of High Priority Projects.
- Update graphics to improve readability for the general public and local agencies and make it easier to incorporate network changes. Develop graphics that are compatible with GIS.
- Develop an amendment process for including minor changes to the Plan and allowing for substitute projects between updates.
- Show relationship between the Countywide Bicycle Plan High Priority projects and the Regional Bicycle Plan and Countywide Pedestrian Plan, as appropriate.
- Update project costs and revise funding section to reflect new or modified sources of funding.
- Improve ability to tabulate facilities by category (e.g., city, planning area, county).
- Clarify issues related to the Bay Trail and Transit Hubs.
- Produce an updated Alameda Countywide Bicycle Plan document

Regarding the existing Countywide Bicycle Plan, between July 2003 and June 2004 (Fiscal Year 2004), approximately 36 miles of facilities on the countywide plan were constructed. The plan includes 492 miles of proposed bicycle facilities in Alameda County of which 120 miles were on existing facilities in 2001. All 15 jurisdictions reporting for the 2004-05 Performance Report, provided updates on existing and planned facilities. With the construction of above 36 miles of facilities in 2004, there are currently 205 miles of bicycle facilities that have been completed in Alameda County on citywide networks of which 85 miles were constructed in the past four years. The facilities constructed on the countywide facility in 2004 are shown in Appendix F.

APPENDICES

- A. Designated Roadway System of the Congestion Management Program and Metropolitan Transportation System
- B. Metropolitan Transportation System Transit System
- C. Level of Service Descriptions
- D. Transit Routing by Operator
- E. 2004 Top 10 Congested Locations in Alameda County
- F. Countywide Bicycle Facilities Constructed in 2004-05

APPENDIX A

**DESIGNATED ROADWAY SYSTEM OF THE CONGESTION MANAGEMENT
PROGRAM AND METROPOLITAN TRANSPORTATION SYSTEM**

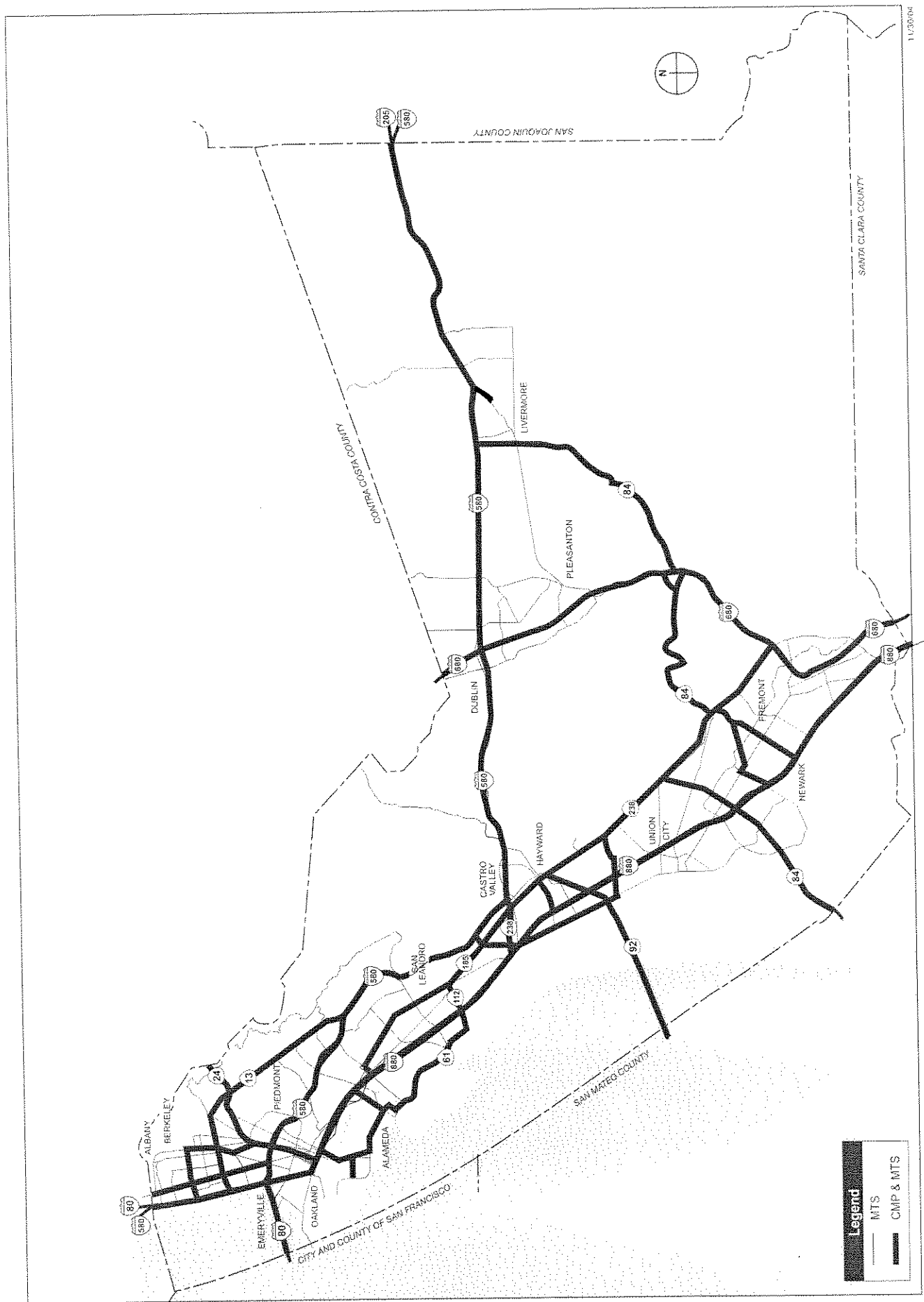


Figure A - MTS and CMP Roadway System

APPENDIX B

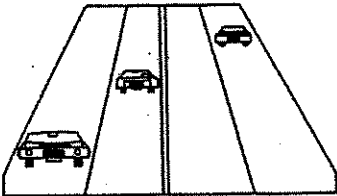
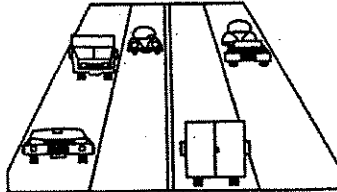
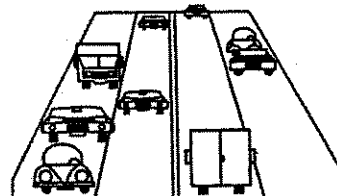
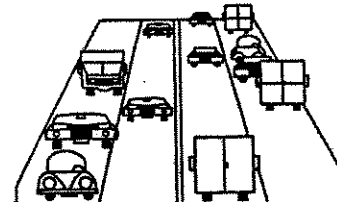
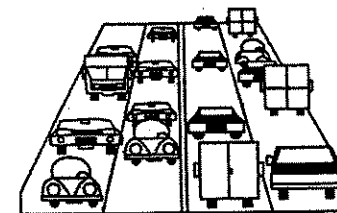
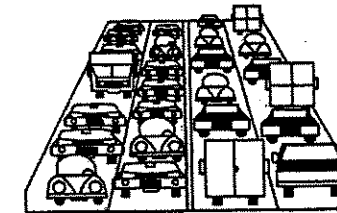
METROPOLITAN TRANSPORTATION SYSTEM TRANSIT SYSTEM



Figure B - MTS Transit System

APPENDIX C

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE	FLOW CONDITIONS	DELAY	SERVICE RATING
A 	Highest quality of service. Free traffic flow with low volumes. Little or no restriction on maneuverability or speed.	None	Good
B 	Stable traffic flow, speed becoming slightly restricted. Low restriction on maneuverability.	None	Good
C 	Stable traffic flow, but less freedom to select speed or to change lanes.	Minimal	Adequate
D 	Approaching unstable flow. Speeds tolerable but subject to sudden and considerable variation. Less maneuverability and driver comfort.	Minimal	Adequate
E 	Unstable traffic flow and rapidly fluctuating speeds and flow rates. Low maneuverability and low driver comfort.	Significant	Poor
F 	Forced traffic flow. Speed and flow may drop to zero.	Considerable	Poor

LEVEL OF SERVICE DEFINITIONS

APPENDIX D

TRANSIT ROUTING BY OPERATOR

Table D.1—Directional Route Miles by Operator in Alameda County^{1,2}

Transit Operator	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05
AC Transit ³	1,150	1,111	1,110	1,098	1,153	1,173	1,189	1,194	1,156	1,108	1,190
BART ⁴	70	70	97	97	97	97	97	97	97	97	97
LAVTA	146	146	284	284	284	284	284	385	385	358	430
Union City	48	48	48	48	62	62	62	45	45	45	45
ACE	NA	NA	NA	NA	89	90	90	90	90	90	90
TOTAL	1,414	1,375	1,539	1,527	1,685	1,706	1,722	1,811	1,773	1,698	1,874

1. MTC, Statistical Summary of Bay Area Transit Operators 2001. FY 2001/02-2003-04 data is provided by the transit operators by special request.

2. Directional Route Miles by Operator is a measure of surface area (roadway and trackway) served. For example, a one-mile segment of road or trackway over which transit operates in both directions would be reported as two miles, while a one-mile segment traversed by vehicles six times in the same direction would be counted as one mile.

3. AC Transit data adjusted to deduct Contra Costa County. Based on hours of operating service in Alameda County and population served by AC Transit, total numbers were reduced by 12 percent.

4. BART data adjusted to deduct San Francisco, Contra Costa, and San Mateo Counties. Data represents actual two-way route miles in Alameda County.

Table D.2—Total Vehicle Miles by Operator in Alameda County (in 000's) ¹

Transit Operator	94/95	95/96	96/97	97/98	98/99	99/00	01/02	02/03	03/04
AC Transit ²	22,089	21,657	19,270	19,450	19,884	21,586	22,997	23,487	21,278
BART ³	22,006	21,603	25,748	29,328	29,226	30,612	31,355	31,177	30,002
LAVTA	1,299	1,270	1,356	1,803	1,937	2,268	2,220	2,137	1,932
Union City	422	446	434	434	467	516	533	538	546
ACE (4)	NA	NA	NA	NA	63	287	368	123	411
TOTAL	45,816	44,976	46,808	51,015	51,577	55,269	57,473	59,462	54,169

1. MTC, Statistical Summary of Bay Area Transit Operators October 2001. FY 2001/02-2003-04 data is provided by the transit operators by special request.

2. AC Transit data adjusted to deduct Contra Costa County. Based on hours of operating service in Alameda County and population served by numbers were reduced by 12 percent.

3. BART data adjusted to deduct San Francisco and Contra Costa County. Based on trackway miles in Alameda County, total numbers reduced by 51 percent for fiscal years 1990 (FY90) through FY95, 53 percent for FY96, 48 percent for FY97 and FY98, 48 percent in FY 99-02, and 51 percent for FY03 through FY05.

4. ACE calculations were based on 45.45 miles in Alameda County.

Table D.3—Service Coverage By Operator in Alameda County (in 000's)^{1,2}

Transit Operator	94/95	95/96	96/97	97/98	98/99	99/00	01/02	02/03	03/04	04/05
AC Transit ³	19.2	19.5	17.4	17.7	17.2	18.4	19.3	19.6	17.8	17.6
BART ⁴	314.4	308.6	265.4	302.3	301.3	315.6	323.2	321.4	275.6	306.2
LAVTA	8.9	8.7	4.8	6.3	6.8	8	7.8	5.9	5.5	5.1
Union City	8.8	9.3	9	9	7.5	8.3	8.6	11.9	12	12
ACE	NA	NA	NA	NA	1.4	3.2	4.1	4.1	1.4	1.4
TOTAL	351.3	346.1	296.6	335.3	334.2	353.5	363	362.9	312.3	342.3
										344.9

1. MTC, Statistical Summary of Bay Area Transit Operators 2001. FY 2001/02-2003-04 data is provided by the transit operators by special request.

2. Total Vehicle Miles/Directional Route Mile. A measure of the amount of service provided, including number of routes and frequency on the transit system. For instance, a one-mile segment traversed by vehicles six times in the same direction would be counted as six miles.

3. AC Transit data adjusted to deduct Contra Costa County. Based on hours of operating service in Alameda County and population served by AC Transit, total numbers were reduced by 12 percent.

4. BART data adjusted to deduct San Francisco and Contra Costa County. Based on trackway miles in Alameda County, total numbers reduced by 51 percent for fiscal years 1990 (FY90)through FY 95, 53 percent for FY96, 48 percent for FY 97 and 98, 48 percent in FY 99-02, and 51 percent in FY03 through FY 05.

Table D.4—Total Annual Systemwide Passenger Boardings (in 000's)¹

Transit Operator	95/ 96	97/ 98	99/ 00	00/ 01	01/ 02	02/ 03	03/ 04
AC Transit ²	64,153	63,290	67,400	70,573	68,859	62,058	64,455
BART ³	77,114	80,528	97,228	103,919	97,146	93,591	97,545
LAVTA	981	1,433	1,836	2,201	2,037	1,922	1,938
Union City	472	525	505	920	477	442	431
ACE	NA ¹	NA	526	920	804	665	616
Alameda-Oakland Ferry	383.8	499.2	549	519	444	426	420
Alameda-Harbor Bay Ferry	104.1	86	128	130	130	106	112
TOTAL	143,208	146,361	168,172	178,819	169,897	159,210	165,515
Non-Alameda County Operators							
CCCTA	4,081	4,173	4,572	9,925	4,681	4,498	NA ²
SF Muni							
- Motor Bus	89,896	92,845	96,394	96,033	98,615	NA	NA
- Trolley Bus	77,807	77,463	78,461	80,868	78,774	NA	NA
- Light Rail	36,728	38,898	41,610	49,699	47,898	NA	NA
SAM Trans	18,900	18,649	17,729	18,136	17,103	NA	NA
SCVTA-Bus	42,625	46,118	47,008	47,238	44,901	NA	NA
SCVTA-Rail	6,168	6900	7914	9,237	7,790	NA	NA
Bay Area System	455,325	470,991	501,684	526,297	509,062	NA	NA

Source: MTC, Statistical Summary of Bay Area Transit Operators October 2001 and December 2003.

FY 01/02-04/05 data for Alameda County is provided by the transit operators by special request and by FY 04/05 National Transit Database.

1. Not applicable — ACE did not begin service until 1999

2. Information not available

APPENDIX E

2004 TOP 10 CONGESTED LOCATIONS IN ALAMEDA COUNTY

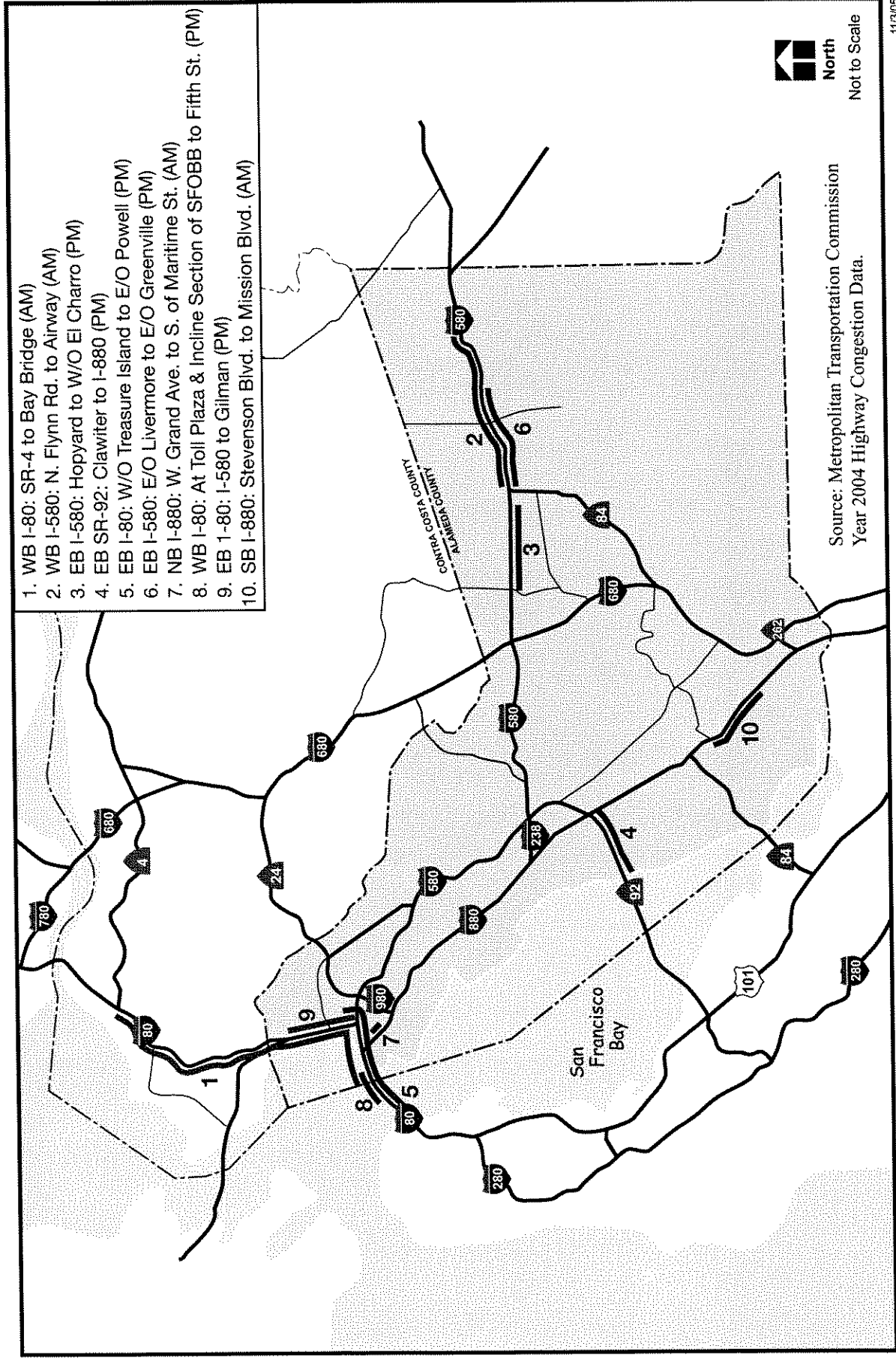


Figure E - 2004 Top 10 Congested Locations in Alameda County

APPENDIX F

COUNTYWIDE BICYCLE FACILITIES CONSTRUCTED IN 2004-05

Bicycle Facilities Constructed in 2004-05

Countywide Bike Plan Facilities Constructed in 2004-05

JURISDICTION	SEGMENT	LIMITS	LENGTH (miles)	COUNTYWIDE BIKE PLAN SEGMENT NUMBER
Alameda County	Dublin Canyon Road	Palomares to 500 ft west of Pleasanton city limits	3.50	Project – 15 Corridor – 40 Segment - BI
Alameda County	Tesla Road	Buena Vista Ave to east of Mines Rd	0.78	Project – 31 Corridor – 70 Segment - AO
Alameda County	East Castro Valley	Jensen Rd to Villareal	1.27	Project – 15 Corridor – 40 Segment – BG & part of BH
Alameda County	Tesla Road	Mines Rd to east of South Vasco	0.80	Project – 40 Corridor – 95 Segment - AI
Albany	Eastshore Hwy	Berkeley city limits to Buchanan	0.30	Project – 1 Corridor – 5 Segment - AB
Emeryville	65 th St	Overland to Hollis	0.15	Project – 22 Corridor – 45 Segment - AL
Fremont	Cushing	Fremont Blvd. to western end	0.51	Project – 2 Corridor – 5 Segment - DG
Fremont	Washington Blvd.	Olive Ave. to Meredith Dr.	0.29	Project – 13 Corridor – 35 Segment – SPUR 5A
Livermore	Las Positas Creek	North of I-580 to western terminus	1.20	Project – 20 Corridor – 40

JURISDICTION	SEGMENT	LIMITS	LENGTH (miles)	COUNTYWIDE BIKE PLAN SEGMENT NUMBER
	Trail	of trail in west Springtown		Segment – TA09
Livermore	Vasco Road	Tesla to Rsearch Dr	0.7	Project – 40 Corridor – 95 Segment - AH
Livermore	Bluebell	Gallowayand Scenic	0.10	Project – 19 Corridor – 40 Segment - CF
Oakland	2 nd St/Brush St.	3 rd St - Broadway	0.44	Project – 1 Corridor – 5 Segment – AL + AM
Oakland	3 rd Street	Brush to Kirkham	0.60	Project – 1 Corridor – 5 Segment - AK
Oakland	Mandela Pkwy	8 th St to 32 nd St	1.20	Project – 1 Corridor – 5 Segment - AJ
Oakland	Market St	MacArthur to 57 th St	1.95	Project – 7 Corridor – 25 Segment – SPUR 1C, 1D
Oakland	Bay Trail, High St, Howard St, Alameda Ave	Fruitvale to Damon Slough	2.45	Project – 1 Corridor – 5 Segment – AV, AW, AX, AY, AZ
Oakland	Mountain/Monter ey/Moraga/Mount ain/Duncan	Broadway to Lake Temascal and Mountain Blvd	9.00	Project – 22 Corridor – 45 Segment – AK to AZ
Oakland	Skyline	Grizzly Peak to Redwood Rd.	10.08	Project – 26 Corridor – 55 Segment – AC, AD
Oakland (Port of	7 th St.	Maritime to Wood	0.25	Project – 1

JURISDICTION	SEGMENT	LIMITS	LENGTH (miles)	COUNTYWIDE BIKE PLAN SEGMENT NUMBER
Oakland)				Corridor – 5 Segment - TBD
Oakland	12 th St	Lakeside to Lakeshore	0.30	Project – 7 Corridor – 25 Segment - BC
San Leandro	Wicks Blvd.	Farallon Dr. Burrough Ave.	0.36	Project – 4 Corridor – 15 Segment - U
TOTAL MILES			36.23	

Bike Plan Facilities not on Countywide Bike Plan constructed in 2004-05

JURISDICTION	SEGMENT	LIMITS	LENGTH (miles)	Comments
Alameda County	Meekland	Hampton Rd to A St	1.44	Class II
Alameda County	164 th Ave	East 14 th St to Liberty	0.38	Class II
Alameda County	Hathaway Ave.	North of A St to Hayward city limits	0.25	Class III
Emeryville	47 th St	Overland to Hollis	0.15	Class II
Emeryville	Doyle St	59 th to Ocean Ave.	0.32	Class III
Fremont	Alvarado	I-880, west to Union Cit city limits	0.87	Class II
Fremont	Stevenson	Gallaudet Dr. to Mission Blvd	0.33	Class II
Fremont	Fremont Blvd.	Blacow Rd. to Adams Ave	0.38	Class II
Livermore	Wetmore Rd	Vallecitos to Arroyo	1.1	Class I
Livermore	NA	Wetmore and Arroyo to southeast corner of Reed/Edwards subdivision – subarea 4	Possibly 0.5	Class I
Oakland	8 th St (Phase 2)	Market to Union	0.40	Class II, city route # TBD-
Oakland	Santa Clara Ave	Grand to Vernon	0.65	Class III, city route #235
Oakland	Broadway Terrace	Broadway to Duncan	1.65	Class III, city route #229
Oakland	West/52 nd /Genoa	West Grand to Berkeley border	1.85	Class III, city route # 27

JURISDICTION	SEGMENT	LIMITS	LENGTH (miles)	Comments
Oakland	Foothill Blvd.	36 th to 41 st	0.65	Class III, city route #31-
Oakland	Stanley/Foothill/Golf Links/105th	Edes to Skyline	11.00	Class III, city route #26
Oakland	MLK/20 th St	20 th St to 2 nd St/San Pablo to Lakeside	1.55	Class III, city route #117
Oakland	San Pablo	17 th St to 36 th St/Emeryville border	1.70	Class III, city route #17
Oakland	High St Gap	Bridge to Jensen	0.20	Class III, city route #14
Oakland	Shepherd Canyon/Saroni	Skyline/Grizzly Peak to Mountain	1.60	Class III, city route #8
TOTAL MILES			26.97	



Alameda County Congestion Management Agency

1333 Broadway, Suite 220 | Oakland, California 94612

Tel: 510-836-2560 | Fax: 510-836-2185 | Web: accma.ca.gov | Email: mail@accma.ca.gov